

UC-NRLF



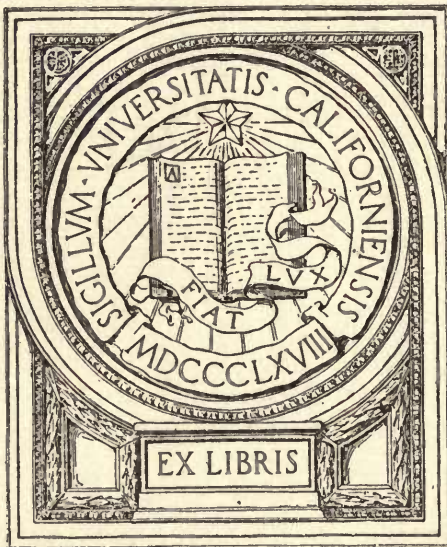
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1894 25th YEAR EDITION 1919

A·DAIGGER & CO. CHICAGO·U·S·A·

CHEMICALS
CHEMICAL &
BACTERIOLOGICAL
LABORATORY SUPPLIES

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1894—1919

TWENTY-FIFTH YEAR EDITION

Laboratory Supplies and
Chemicals for
Chemists and Bacteriologists



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Foreword

[N presenting this catalog for your consideration, we wish to call your attention to some of its most distinctive features. No attempt has been made to prepare a complete list of scientific laboratory apparatus and equipment as there are many highly specialized forms of equipment to which only occasional reference is necessary. This special apparatus is covered by separate pamphlets which are available at all times. We have attempted to list all forms of standard equipment as well as those of special design, for which there is a moderately general demand.

THIS CATALOG IS A COMPILATION OF EXCLUSIVELY AMERICAN MADE GOODS AND IS A TRIBUTE TO THE PROGRESS MADE BY AMERICAN MANUFACTURERS

We have elected to prepare a fairly complete catalog of convenient size, rather than an encyclopedia of scientific apparatus, which would of necessity be so bulky as to be unwieldy.

In the selection and arrangement of descriptive data and illustrations, we have been guided by the requirements of those who may have occasion to use the catalog. We have made an attempt to simplify the work of ordering our merchandise, wherever it has been possible to do so, without sacrificing accuracy or necessary information.

Each illustration shows either a standard type of apparatus or a characteristic feature which may be adapted to your requirements.

As a general rule, the articles described in this catalog are carried in stock for immediate delivery. Other apparatus can be promptly secured or made up at a reasonable cost.

Reference to other catalogs will be understood by us and the specifications correctly interpreted.

The utmost care is observed in checking and packing goods for shipment, and every effort is made to avoid breakage in transit. All claims for loss, damage or breakage in transit should be promptly filed against the carrier. We will assist in every way possible, the adjustment of such claims. Any complaints will be promptly and cheerfully investigated and complete satisfaction is assured.

All prices are based upon actual market conditions and are subject to change without notice. Fluctuations may be expected, but our prices will be consistent with existing conditions over which we have no control.

The cost of containers and packing will be charged at cost. Acid bottles, cases, carboys and some drums are extra and returnable for full credit at our store or warehouse.

Our terms of payment are NET CASH 30 days, F. O. B. Chicago.

Where no definite shipping instructions are furnished with order, we will use our own judgment, and ship by shortest and cheapest route. All shipments are made in compliance with Interstate Commerce Commission regulations. Parcel-post shipments will be made wherever possible, with a small charge for insurance.

Conditions arising out of the war require our customers to obtain licenses for the purchase of ethyl alcohol and certain chemicals classified as explosives. Whenever such materials are ordered, it is imperative that certified copies of license accompany the order, as shipments cannot be made until such certificates are received.

Our GLASS BLOWING DEPARTMENT is adequately equipped to repair and make up all kinds of standard and special apparatus, either plain, **graduated** or ground.

Our BALANCE and INSTRUMENT REPAIR DEPARTMENT has been organized to inspect and repair any imported or domestic balances and instruments. We take great pride in our ability to render this service and guarantee all work of this nature.

We wish to thank our friends and customers for their past consideration and hope that it will continue. We solicit all inquiries, and no order is too small to receive our most careful attention.

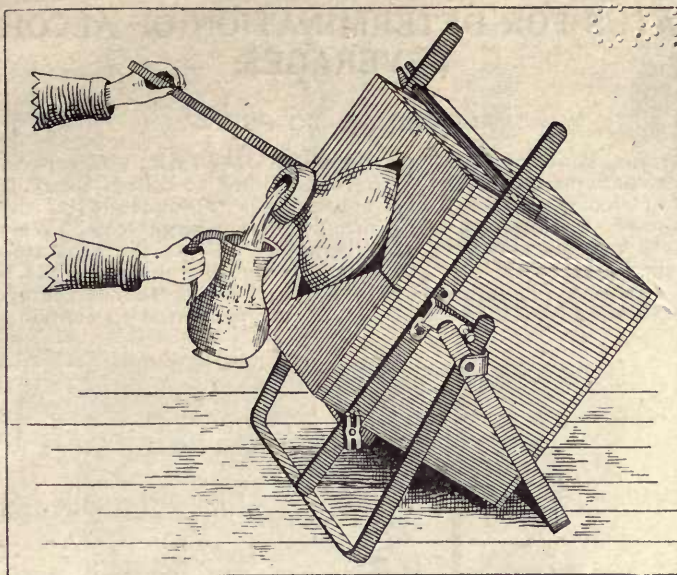
Our organization has been planned for SERVICE. It is at your disposal.

Faithfully yours,

A. DAIGGER & COMPANY.

Chicago, January, Nineteen-Nineteen.

dyt



1000

- 1000 ACID CARBOY STAND.** A very useful and simple device, whereby the carrying and tilting of carboys, otherwise a difficult and dangerous operation, becomes easy and their contents can be poured out with safety. The carrying bars are clamped to the carboy by means of two screw bolts, which rest on the cleats of the box; these bars are of such length as to project beyond the end of the box and provide handles for carrying. The stand can be folded up in a compact manner for transportation.....**\$6.50**



1006



1007a



1007b

- 1006 ACID PUMP**—A convenient and handy arrangement for drawing acid, etc., from carboys, bottles, etc. Will fit any container having a neck from $1\frac{3}{4}$ to $2\frac{5}{8}$ inches diameter**\$6.75**

- 1007a ADAPTERS**, straight; light wall, lamp blown.

Length, mm.	130	150	200
Diameter at large end, mm.	22	30	40
Each	\$0.20	\$0.30	\$0.35

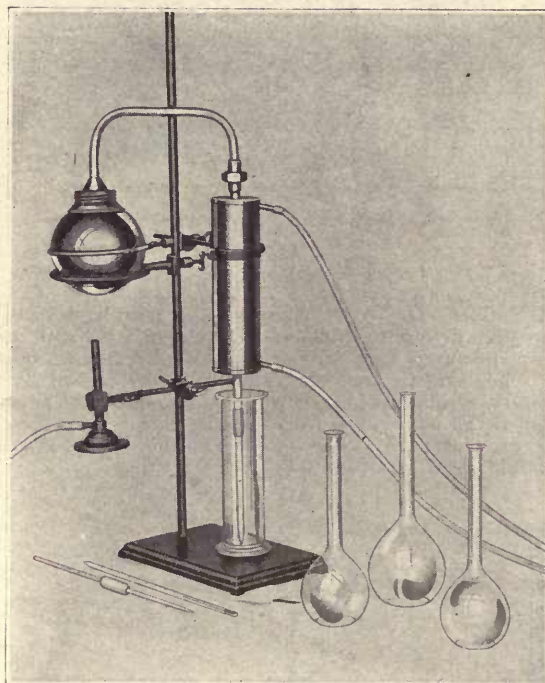
- 1007b ADAPTERS**, curved; light wall, lamp blown; for connecting retorts with receivers.

Length, mm.	130	150	200
Diameter at large end, mm.	22	30	40
Each	\$0.20	\$0.30	\$0.35

APPARATUS FOR DETERMINATION OF ALCOHOL IN BEVERAGES

ACCORDING TO FRITZ

This apparatus, known also as the NERBEROMETER, was especially designed for the brewers and manufacturers of beverages and so-called "near" beers for the determination of alcohol content. This apparatus is recommended at this time when so many substitutes for beer are being produced on a large scale. We are prepared to furnish this apparatus complete from stock, as well as the separate items which make up the apparatus complete. The necessity for this apparatus has been brought about by the stringent requirements of the law, limiting the percentage of alcohol which these beverages (so-called "near" beers) are permitted to contain.



1011

The apparatus consists of a specially constructed copper still, gas heated, with a copper condenser, water cooled. Under proper heat control, the distillate is collected in the cylinder as shown above. An aliquot portion is withdrawn and the percentage of alcohol read with an alcoholometer. The still and condenser are made of heavy copper, water inlet and outlet on the condenser being made of lead pipe. All joints are provided with rubber gaskets.

1011 Price complete as shown.....\$40.00

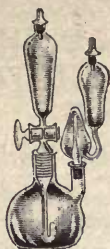
For prices on all parts which are interchangeable, as flasks, pipettes, burners, rubber tubing for gas and water, thermometers and so forth, see under alphabetical classification throughout the catalog.

While it is impracticable to list all special apparatus required for testing materials, we wish to call your attention to our special sections on Tar and Asphalt testing.

We are prepared to furnish any apparatus both in Metalware and Glassware required on special tests, etc.



1014



1022



1028



1034

1014	ALKALIMETER—Bunsen's	\$1.75
1022	ALKALIMETER—Geissler's, latest form, with two ground joints.....	3.00
1028	ALKALIMETER—Mohr's (latest style).....	2.50
1034	ALKALIMETER—Schroedter's	3.00

ANNEALING CUPS, see Crucibles.



1050



1040



1042

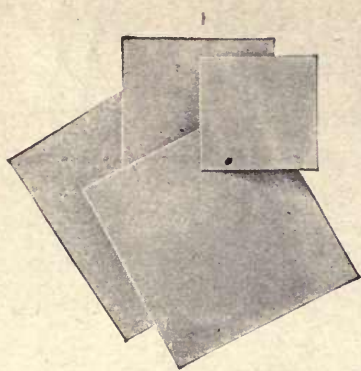
1040	ANVIL, for Lead Buttons, 6"x6", planed on one side.....	\$1.20
1042	ANVIL, Plattner's, 1½"x1½", for blowpipe work, polished steel. .	.50
1050	APRON, of waterproof rubber cloth, to protect the clothes from chemicals. Length 45, 48 or 50 inches, as desired.....	1.00

See also Sleeves and Gloves.

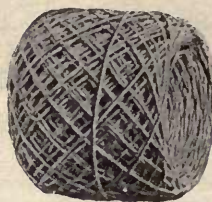
ARSENIC TEST PLATES, see Plates, Porcelain.

ARSENIC TUBES, see Tubes, Reduction.

1054	ASBESTOS—SHEETS, 42x48 inches, fire and acid-proof. Approximate weight per sheet.	
	Thickness, inches.....	¾ 1/8 3/8 1/2 5/8 3/4 7/8 1
	Weight, about, lbs.....	2¼ 4½ 6½ 9 13¼ 17½ 26¼ 35
	Per lb.....	\$0.35
1056	ASBESTOS BOARDS, cut in squares.	
	Size, inches.....	4x4x1/8 4x4x3/8 5x5x1/8 5x5x3/8 6x6x1/8 6x6x3/8
	Dozen	\$0.50 \$0.80 \$0.80 \$1.20 \$1.20 \$1.80
1057	ASBESTOS CLOTH, 36 inches wide, unaffected by acid, fire, etc.	
		Fine Medium Heavy
	Per yard.....	\$4.25 \$5.50 \$7.00
1058	ASBESTOS CEMENT, fire and acid-proof, for repairing furnaces, etc.	
	Per 5-lb. can.....	\$1.50
1060	ASBESTOS CORD and TWINE, in one-lb. balls. Useful as a wrapping for handles of apparatus which become heated, and to suspend retorts, crucibles, etc.	
	Diameter, inches.....	¼ 1/8 1/16
	Per lb.....	\$3.60 \$3.60 \$3.60
1062	ASBESTOS PADS, for protecting table under blast lamps, etc. Made of thick asbestos board edged with iron.	
	Size, inches.....	8x8 10x13 13x20
	Each	\$0.75 \$1.25 \$2.25



1065



1060



1062

1064 ASBESTOS PAPER, useful in filtering acids, etc., in rolls 36 inches wide of any length, one yard, weighing about 1 lb. Per lb.....\$0.40

1065 ASBESTOS WOOD, so-called Asbestos Lumber, harder than wood, acid and fireproof, in sheets 42x48 inches.

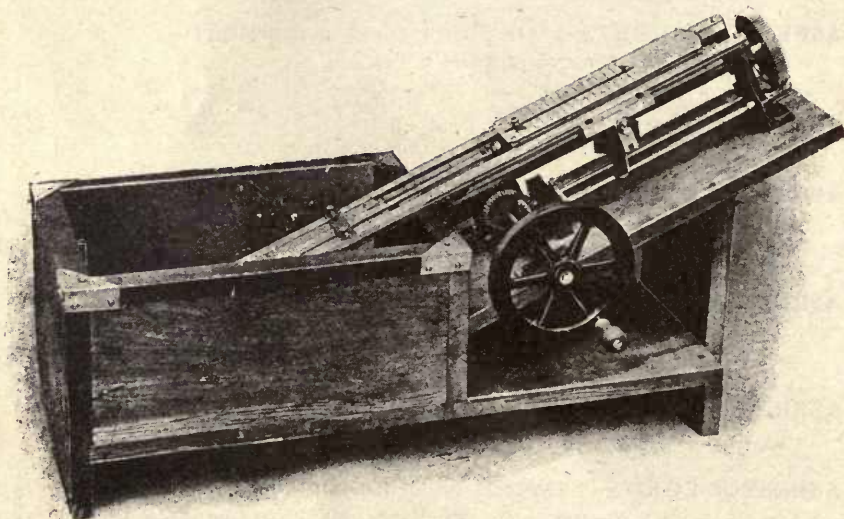
Thickness, inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$
Per square foot.....	\$0.40	\$0.80	\$1.25

The above prices are for full sheets 42x48 inches. If smaller sheets are desired, an extra charge for cutting and waste will be made. Care will be taken to cut to best advantage.

ASPIRATORS—See Filter Pumps.

AUTOCLAVES—See Bacteriological Apparatus.

ASPHALT TESTING APPARATUS



1066

1066 CEMENTATION MACHINE, Kirschbraun's. For testing the cementation values of asphalt cements. Furnished with hand power or with pulley for motor power. (The above machine is described in the Journal of the Industrial and Engineering Chemistry, Volume 6, No. 12, December, 1914).....\$85.00

1067 ASPHALT BRIQUETTE MOULD 5.00

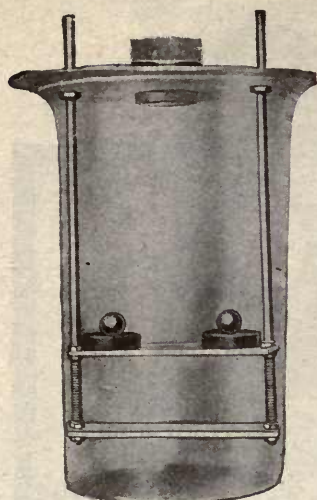
STANDARD METHOD FOR DETERMINING THE SOFTENING POINT OF BITUMINOUS MATERIALS OTHER THAN TAR PRODUCTS

1067a OPERATION—Carefully melt sample and fill ring with material to be tested. Remove any excess. Place ball in center of ring and suspend in beaker containing approximately 400 c. c. of water at a temperature of 5° C. Softening point is temperature at which specimen has dropped one inch. Successive tests should average within 3° C. For temperatures above 95° C., glycerine should be used instead of water.

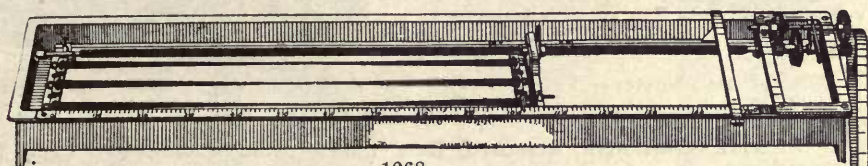
RING AND BALL

APPARATUS—Brass ring 15.875 m.m. ($\frac{5}{8}$ in.) in diameter, 6.35 m.m. ($\frac{1}{4}$ in.) deep, 2.38125 m.m. ($\frac{3}{32}$ in.) wall, suspended 25.40 m.m. (1 in.) above bottom of beaker. Steel ball 9.525 m.m. ($\frac{3}{8}$ in.) in diameter, weighing between 3.45 g. and 3.50 g. Standardized thermometer. Glass Beaker, approximately 600 c.c. capacity.

Price\$10.00

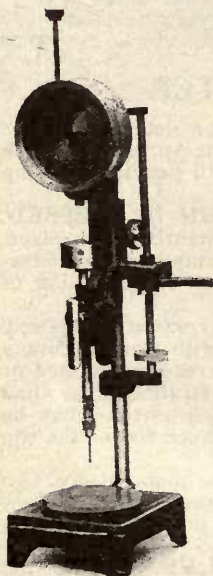


1067a



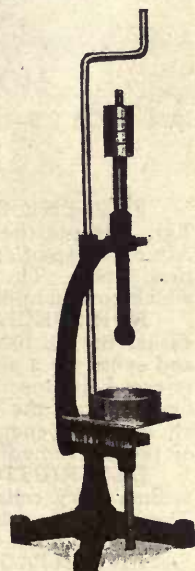
1068

1068 DUCTILITY MACHINE. Adapted for ductility and elongation tests under various conditions of temperature and speed. This machine has a standard stretch of 150 centimeters with a 5 cm. or 60 cm. speed per minute. Three test pieces can be tested at one time. It is constructed entirely of metal, porcelain lined. Furnished with direct or alternating current motor, including three briquette moulds.....\$200.00



1069

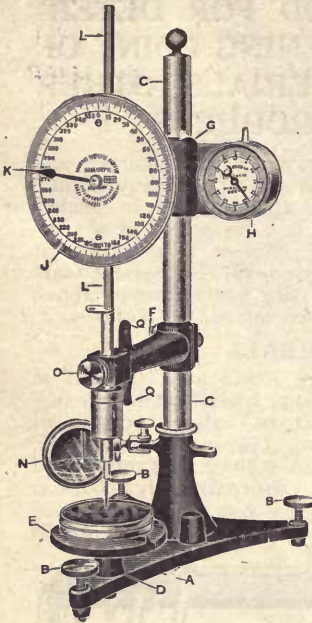
1069 PENETROMETER. Latest improved form with finest adjustment. By testing the depth to which, under a definite load and during a given time the Standard Needle will penetrate, you can determine the consistency of the asphalt cement or similar material. The stationary dial is graduated into 100 divisions of $\frac{1}{10}$ m.m. each. The indicator works automatically and gives absolutely correct readings.....\$55.00



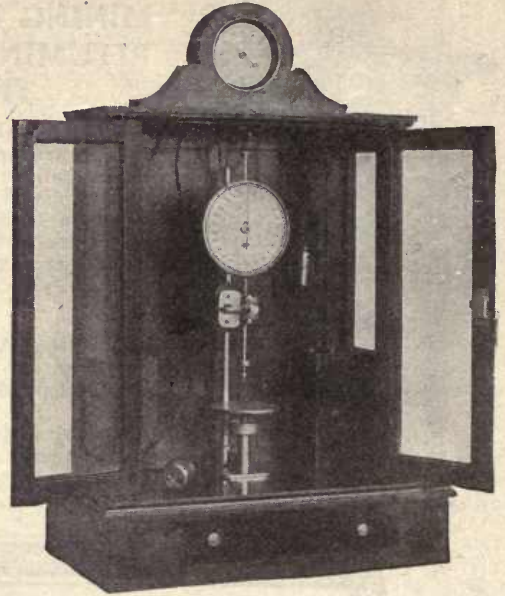
1070

1070 ADHESION MACHINE, Kirschbraun's. For testing comparatively the adhesive strength of asphalt as a binder for mineral conglomerates in the construction of asphalt pavements. Complete with two sample cups and instructions 25.00

1070a EXTRA CUP for No. 1070 Adhesion Machine...... 1.00



Standard Penetrometer
1071



1072

- 1071 PENETROMETER, Standard, New York Testing Laboratory Type,** for measuring the depth of penetration of a standard needle into the material to be tested at 77° F. or 25° C. in 5 seconds of time under a 100 gram weight; with standard clock reading in $\frac{1}{2}$ seconds and dial graduated to $\frac{1}{10}$ mm. A set of adjustable weights is provided permitting the use of either 50 or 100 gram loads in addition to the standard of 100 grams. See "The Modern Asphalt Pavement".....**\$75.00**
- 1071a PENETROMETER,** Miniature, exactly similar to the above but one-half the size and specially designed for engineers' portable use in making comparative tests, without clock..... **25.00**

HOYT'S ELECTRICAL PENETROMETER

- 1072 HOYT'S**—An electrically operated, automatic instrument for determining the consistency of asphalt and similar substances by measuring the depth to which a standard needle with a definite load will penetrate during a definite period of time, at a given temperature.

FOR THE STANDARD TEST THE LEFT PUSH BUTTON IS PRESSED. This releases the needle with attached weight and penetration instantly takes place. After a lapse of exactly five seconds the needle is automatically reclamped and penetration ceases. The depth of penetration is read directly from the dial, each division of which corresponds to 0.1 mm. downward movement of the needle.

FOR SPECIAL TESTS the instrument may be adjusted for any variation desired. Either the 50, 100, 150, 200, 250, 300 or 350 gram test may be made with equal accuracy and speed by a simple substitution of weights. The needle may be readily clamped or released for special tests by means of a clutch. For periods of penetration other than five seconds, the push button on the right may be used and any desired time may be allowed for penetration, the period being controlled by the large minute dial at the top of the instrument.

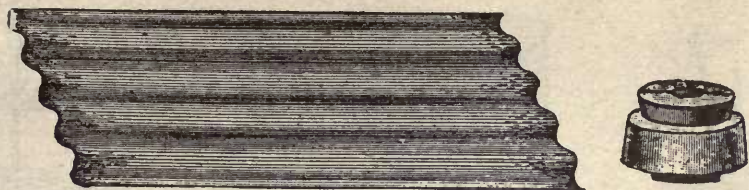
DESCRIPTION—The entire instrument is automatic and is operated by two ordinary dry cells. It is enclosed in a mahogany case with glass sash, lock and key. There is also a large drawer located in the base for keeping the testing pans, thermometer and other accessories.

ADVANTAGES—1st, produces uniform penetration tests; 2nd, controls the duration of tests; 3rd, applies uniformity of penetration weights; 4th, eliminates vibration during operation; 5th, insures absence of personal equation.

Price, complete**\$100.00**

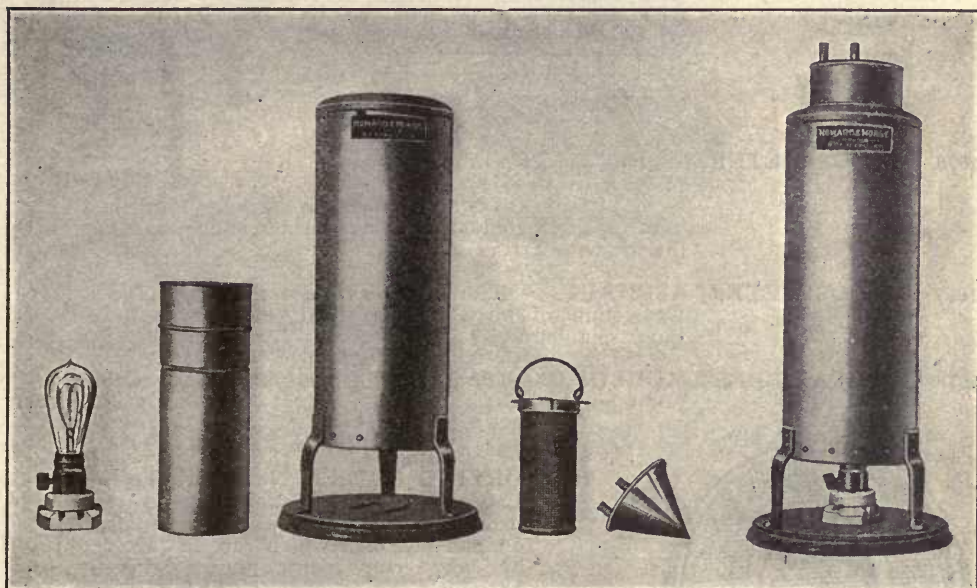
1072a NEEDLES, A. S. T. M. Standard. Description: The needle for this test shall be of cylindrical steel rod, 50.8 mm. (2 inches) long and having a diameter of 1.016 mm. (.04 inch) and turned on one end to a sharp point, having a taper of 6.35 mm. (.25 inch).

Price, each..... **\$1.00**



1073

1073 ASPHALT FLOW PLATE. Set consisting of two plates, each with six corrugations, and one mould\$5.00



1074

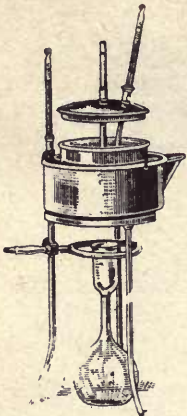
1074 EXTRACTOR. New York Testing Laboratory. For the analysis of paving mixtures containing broken stone. These extractors are made entirely of metal. (Detail information and instructions furnished upon request.) Complete extractor.....\$35.00



1075

1075 RING AND BALL, for melting point test.....\$1.00

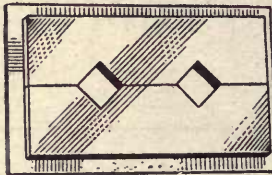
NOTE: We are in position to furnish special apparatus for testing various grades of tar, oils, etc. Send us your list of requirements for quotation. For Hydrometers, Thermometers, Metronomes and Stop-Watches used in connection with asphalt testing see under individual headings.



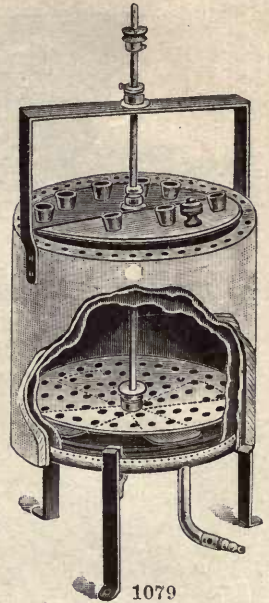
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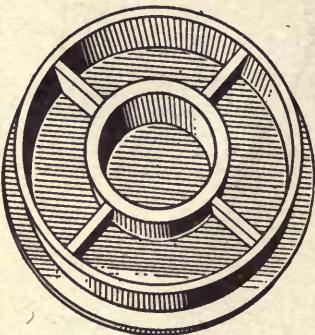


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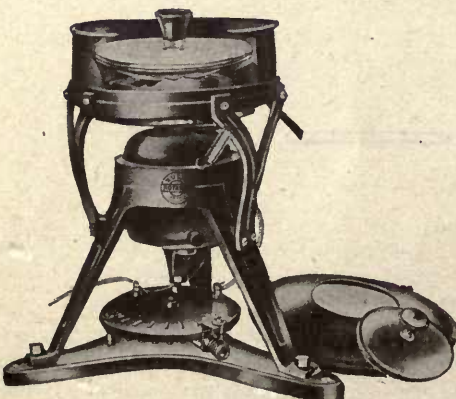
1079

- 1076 VISCOSIMETER, Engler's.** Latest improved form with double walls. Gold plated inside, with platinum outlet. Furnished with a graduated flask, ring burner, and two fine thermometers\$65.00
- 1077 VISCOSIMETER, ASPHALT.** "New York Testing Laboratory Type." Consisting of an aluminum float, with three brass plugs, standardized 8.00
- 1078 CUBICAL BRASS MOULD.** One-half inch, with brass plate, for melting point apparatus 5.00



1080

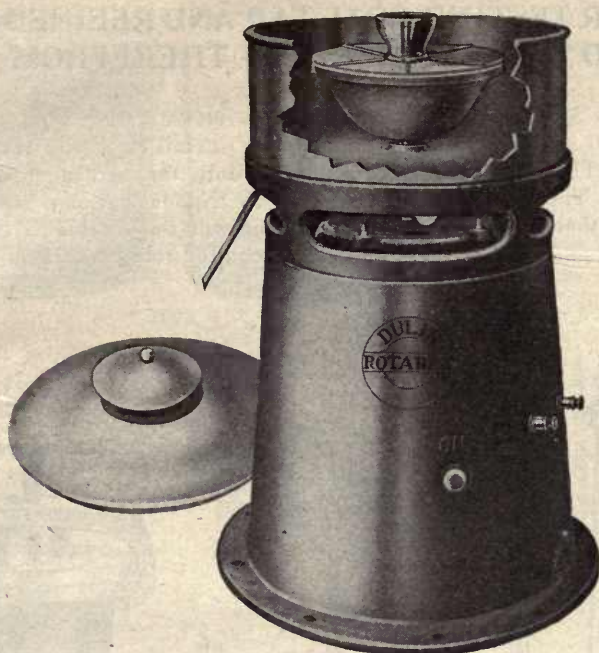
- 1079 DRYING OVEN.** "New York Testing Laboratory Type." For uniform temperatures. This oven has a fan mounted on ball bearings which can be revolved by any convenient power, thereby hastening the drying. The heat is generated from a ten-inch ring burner below the oven, the outside is covered with asbestos, made of Russian iron.....\$25.00
- 1079a DRYING OVEN.** Same as No. 1079, but made of copper 35.00
- 1080 BITUMEN HOLDER.** Draper Type.. 3.00



1081

- 1081 DULIN ROTAREX,** designed for the determination of Mineral Aggregate in Bituminous pavements. A complete extraction can be made in five minutes, which would require two hours by the filtering methods. With a specially constructed electric motor, which can be operated on either alternating or direct current, 110 volts (unless 25 cycles or less), including 5 feet of lamp cord with plug for attaching to Edison lamp socket. Net.\$70.00

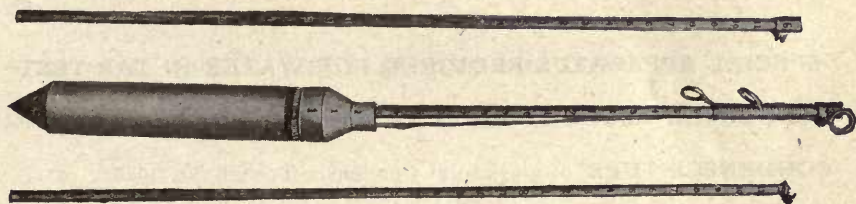
(Descriptive circular upon application.)



1083

DULIN ROTAREX, as above, large size, with universal motor, capable of operating on either direct or alternating current. 110 volts, 60 cycles or on 220 volts direct current. Net.....\$125.00

APPARATUS FOR WATER SAMPLING IN CREOSOTE OILS.



1084

SAMPLING OF CREOSOTE OIL IN TANK CARS AND STORAGE TANKS FOR MAKING WATER DETERMINATIONS

"It is recommended as good practice that, in order to obtain accurate determinations as to the percentage of water contained in creosote oil in tank cars and in storage tanks, the principle of zone sampling be employed, and described in the 1916 report of your Committee (Proceedings, Vol. 17, pp. 447 to 456) and that for the purpose of obtaining zone samples an apparatus of the type illustrated in this report be used."

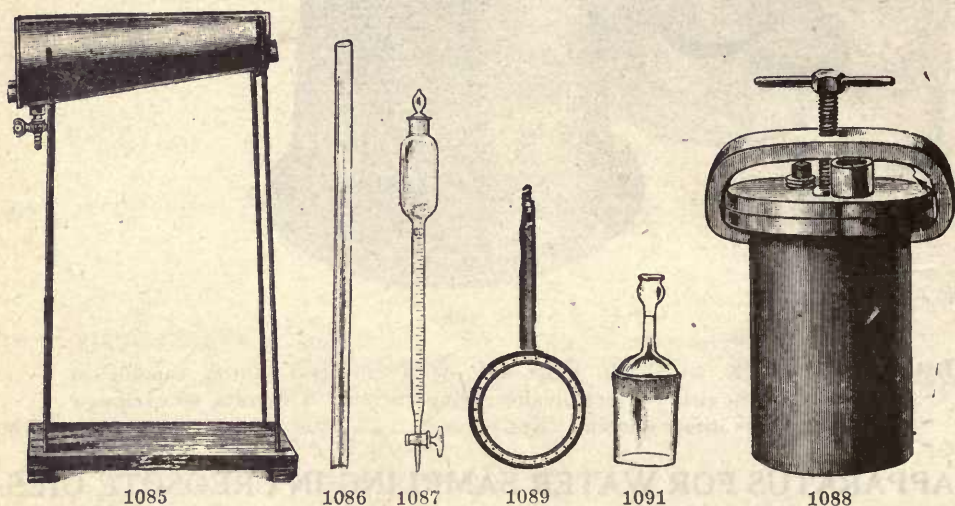
From Bulletin of the American Railway Engineering Association, Vol. 18, No. 195, March, 1917.

This apparatus consists of a brass cylinder with a pointed, perforated bottom. The holes in the bottom are closed by means of a spring valve, which can be opened by means of a wire extending along the extended stem attached to the cylinder. This stem is made in several sections, so that it can be used at any depth. The stem is calibrated in feet and inches, thus facilitating the zone sampling. The apparatus is as illustrated.

Price\$45.00

APPARATUS FOR TESTING COAL TAR AND REFINED TARs, OILS AND PITCHES DERIVED THEREFROM

As adopted in the Standard Methods of the Barrett Manufacturing Company, New York. See Journal of Industrial and Engineering Chemistry, April, 1911, March, 1913, and May, 1914. The apparatus listed below is only the special apparatus required for these tests. The regular apparatus, such as tripods, burners, clamps, etc., are to be found under their respective headings throughout the catalogue. Complete lists of both the special and regular stock apparatus required for the various tests will be sent upon request.

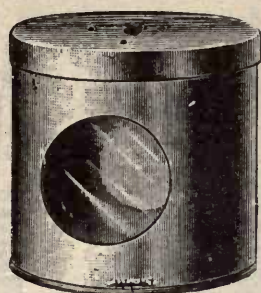


SPECIAL APPARATUS REQUIRED FOR WATER IN TAR TEST

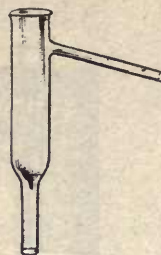
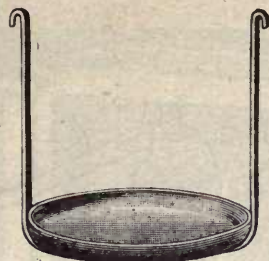
1085	CONDENSER TROUGH, of copper, on supports, with wooden base.....	\$ 8.00
1086	CONDENSER TUBE, of glass to fit Condenser Trough No. 1085.....	.30
1087	SEPARATORY FUNNEL, with stopcock, capacity, 120 c.c.....	3.00
1088	COPPER STILL, with steel clamps, inside dimensions, 6x3½ inches, with six paper gaskets	15.25
1088a	COPPER STILL, Same as No. 1088, but larger size, i. e., inside dimensions, 7½x5 inches	19.50
1089	RING BURNER, brass, to fit small Still No. 1088.....	1.90
1089a	RING BURNER, brass, to fit large Still No. 1088a.....	3.25
1090	CONNECTING TUBE, of glass.....	.25

SPECIAL APPARATUS REQUIRED FOR SPECIFIC GRAVITY TEST

1091	SPECIFIC GRAVITY BOTTLE, Barrett modification of the Hubbard form, 50 c.c. capacity	\$ 1.90
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1095



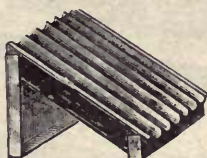
1094



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1096

SPECIAL APPARATUS REQUIRED FOR EVAPORATION TEST

- 1092 EVAPORATING DISH, of pure nickel, with flange and handle.....\$1.90

SPECIAL APPARATUS REQUIRED FOR SLIDE TEST

- 1093 SLIDE BOX, of copper, with six corrugations.....\$9.00

SPECIAL APPARATUS REQUIRED FOR LIGHT OIL TEST

- 1094 HEMPEL DISTILLING TUBE.....\$0.35

SPECIAL APPARATUS REQUIRED FOR MELTING POINT OF HARD PITCH TEST

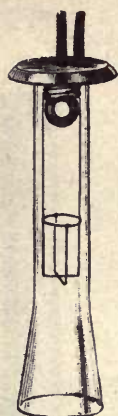
- 1095 AIR MELTING POINT OVEN, of copper, with mica window, removable tray, etc.\$12.75

SPECIAL APPARATUS REQUIRED FOR MELTING POINT OF PITCH TEST

- 1096 PITCH MOULD, consisting of iron clamps with brass block.....\$5.00
 1096a THERMOMETER, for melting point, etched on stem, 0-80° C. in 1/5ths... 4.50
 1096b THERMOMETER, for melting point, etched on stem, 60-140° C. in 1/5ths.. 4.50

SPECIAL APPARATUS REQUIRED FOR CONSISTENCY OF REFINED TARs AND SOFT PITCH TEST

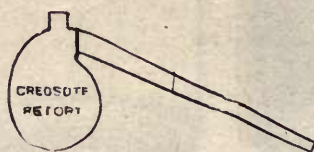
- 1097 SCHUTTE PENETROMETER, with one plug.....\$3.50
 1097a PLUGS, only, for above Penetrometer, each......25



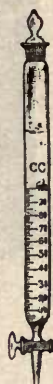
1098



1099b



1099c



1099d

SPECIAL APPARATUS REQUIRED FOR FREE CARBON TEST

- 1098 **EXTRACTION APPARATUS**, Barrett modification of the Cottle, or Underwriters' form. Complete with flask, cover, coil and basket of German silver wire **\$4.25**
- 1098a **GLASS FLASKS**, only, for above Extraction Apparatus..... .60
- 1098b **WIRE BASKET**, of German silver, only for above Extraction Apparatus... .80
- 1098c **COVER AND COIL**, of block tin, only, for above Extraction Apparatus.... 3.00

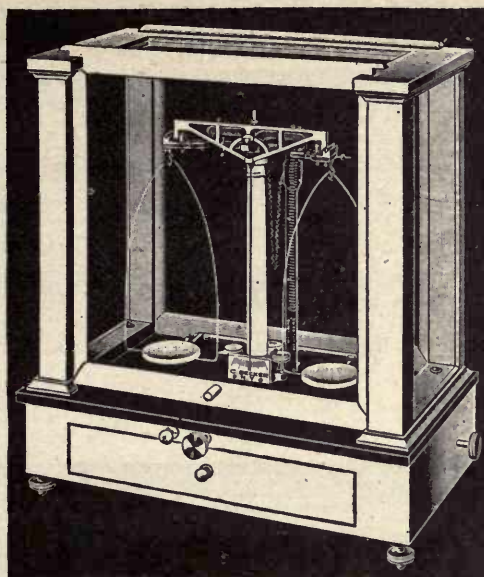
SPECIAL APPARATUS REQUIRED FOR STANDARD CREOSOTE OIL DISTILLATION

- 1099 **ASBESTOS SHEET**, specially cut to fold into cover for retort..... **\$0.50**
- 1099a **THERMOMETER**, graduated from 0 to 400° C. in 1°. Made specially for this test 5.00
- 1099b **CONDENSER TUBE**35
- 1099c **RETORT**, Resistance Glass, 250 c.c. capacity. Made to special dimensions and with neck set at special angle, otherwise similar to regular retorts which, however, are not suited for this work..... 1.45

SPECIAL APPARATUS REQUIRED FOR ADDITIONAL CREOSOTE OIL TESTS

- 1099d **SEPARATORY FUNNEL**, with ground glass stopper and stopcock, graduated to 100 c.c.; for heavy oils..... **\$2.50**
- BAKING OVENS**. For Baking Ovens, see the Despatch Electric Oven.

CHAINOMATIC BALANCES



ANALYTICAL CHAINOMATIC BALANCE NO. 1101

With Vernier

Capacity	200 grams
Sensitiveness	1/20 milligram
Diameter of Pans	2 3/8 inches
Length of Beam	7 inches
Bearings	Agate planes
Knife edges	Agate
Capacity of bar and vernier.....	50 Mgm. to 1/10 Mgm.

It is the regular No. 1105 Becker Balance equipped with chain, and gives direct rapid reading without rider or small weights.

Polished mahogany case, front sliding frame, counterpoised. Mounted on black plate glass.

After all the necessary large weights up to 50 milligrams are placed on the pan, the weighing from 50 milligrams to 1/10 of a milligram can be concluded without opening the balance or using the arrest, eliminating the necessity of reading and replacing all small weights or the handling of a rider with a consequent enormous saving of time.

One end of the weighing chain is hung from an arm of the scale beam, and the other end from a slide-block which is moved up and down on a vertical graduated scale. As this block is raised, more of the weight of the chain is taken from the beam and hangs from the slide-block which forms a stationary support for holding the inactive part of the chain. As the slide is lowered a greater proportion of the weight of the chain is transferred to the beam.

Price\$175.00

NOTE: We have produced specially designed sets of weights for the Chainomatic Balances. For full details, see page 32.

We are also in position to furnish a less expensive Chainomatic Balance of following specifications:

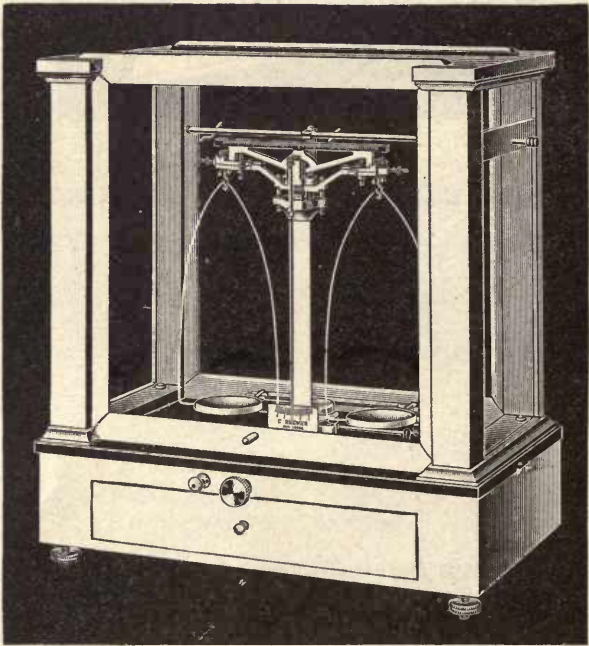
No. 1103 Analytical Balance with Vernier (see illustration below).

Capacity	100 grams
Sensitiveness	1/20 milligram
Diameter of pans	3 inches
Length of beam	6 inches
Bearings	Agate
Knife edges	Agate
Capacity of bar and vernier.....	50 Mgm. to 1/10 Mgm.

It is the regular No. 1105 Becker Balance equipped with chain, and gives direct rapid reading without rider or small weights.

Polished mahogany case, front sliding frame counterpoised. Mounted on black plate glass.

Price	\$130.00
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ANALYTICAL BALANCE NO. 1105

Capacity	100 grams
Sensitiveness	1/20 milligram
Diameter of pans	3 inches
Length of beam	6 inches
Bearings	Agate
Knife edges	Agate

Aluminum beam graduated in 1/5 milligram with white graduations on black background.

Independent arrest for pans with automatic stop.

Width of pan support 4 in.; wider if specified.

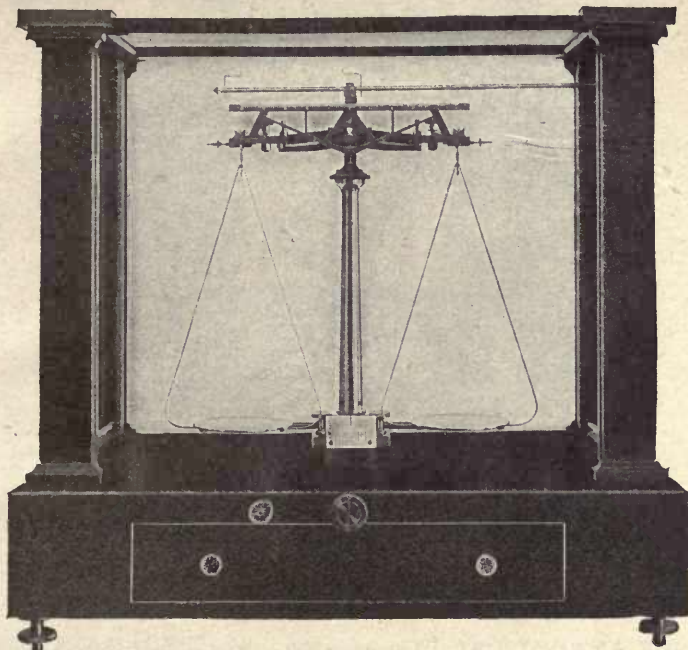
Polished mahogany and glass case, glass top, front sliding frame counterpoised.

Dimensions of case: 16¼ in. long, 9 in. wide, 18½ in. high.

1105 Price	\$ 90.00
Price, mounted on black plate glass.....	100.00

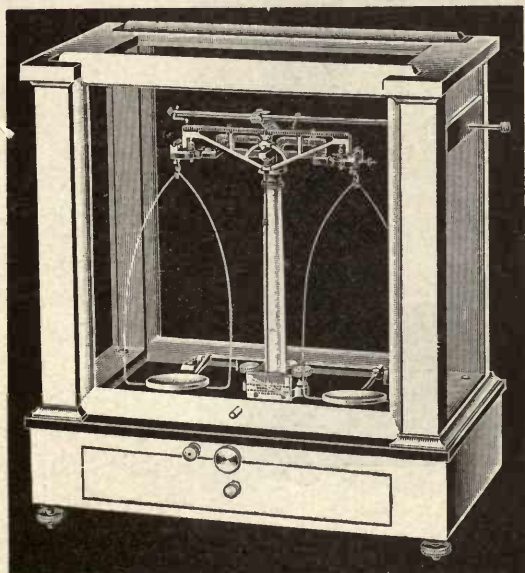
BALANCES ANALYTICAL

We have listed herein, the most popular Balances of American makes, and can supply any Balance not listed, on short notice.



1107

1107 BALANCE ANALYTICAL, Troemners. This world-famous Balance meets the most exacting demands of the analytical chemist. Short 7-inch cold rolled aluminum beam with 50 divisions on each side. Sensibility to 1/20 milligram. Capacity 200 grams. Edges and planes of agate. Pans of aluminum. Arches of cold drawn nickel silver. Mahogany and glass case with black glass base. Pan release and arrest. All brass parts gold plated. Price, each\$162.50



1109

1109 BALANCE ANALYTICAL, BECKER. An American made Balance of high reputation, in widespread use.

Capacity—200 grams.

Sensibility—1-20 milligram.

Case—Of polished mahogany and glass, with sliding frame counterpoised, mounted on black plate glass. Dimensions, 16¼ inches long, 9 inches wide, 18½ inches high. With specific gravity support and holder for weighing test tubes, with counterpoise.

Beam—Graduated on both sides in 1-10 milligram, with white graduations on black background. Length of beam, 7 inches.

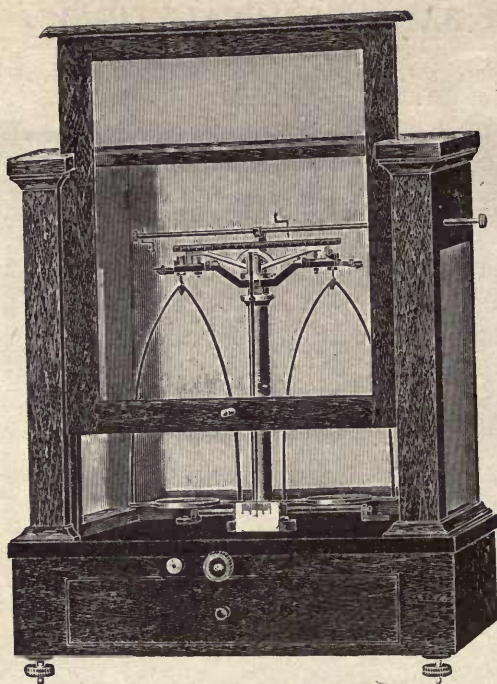
Knife Edges and Planes—Of agate throughout.

Release and Arrest—Independent arrest for pans with automatic stop.

Pans—2¾ inches in diameter. Pan supports 4 inches wide, or wider, if specified.

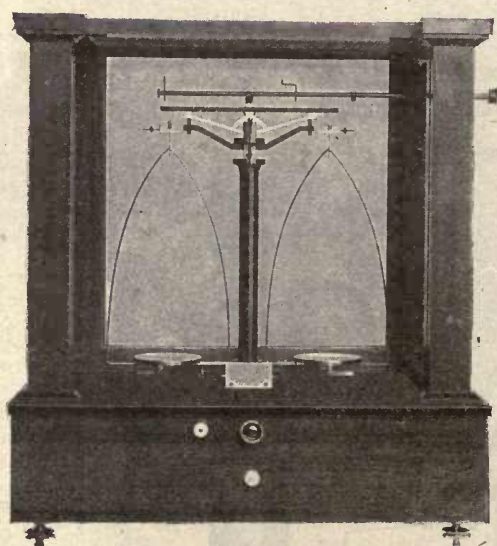
Price, as above described.....\$135.00

Price, with adjustable shelf for supporting beaker when taking specific gravities.. 145.00



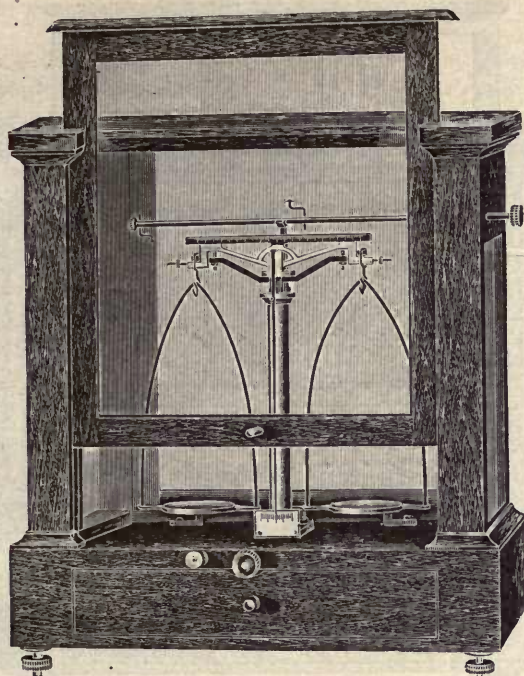
1111

- 1111 BALANCE ANALYTICAL.** Capacity 200 grams, sensitive to $1/20$ mgm. under full load. All metal parts heavily lacquered, pans $2\frac{1}{2}$ inches diameter, black beam with 50 white graduations each side of zero. Dial has red graduations so that black pointer is easily observed. All bearings of agate. Case of seasoned mahogany 17 inches long, $17\frac{1}{2}$ inches high by 9 inches deep.....\$100.00



1113

- 1113 BALANCE ANALYTICAL.** Capacity 100 grams, sensibility $1/10$ milligram. Beam 6 inches long of hand-rolled aluminum. Price, complete with one (1) pair 3-inch watch-glasses; three (3) five (5) milligram riders; wood bench for specific gravity weighings.....\$85.00
Price, with metal parts heavily gold-plated..... 95.00



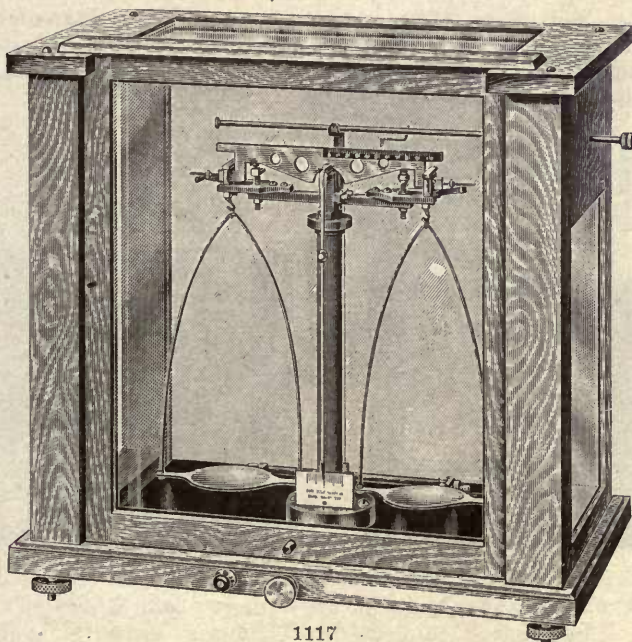
1115

1115 BALANCE ANALYTICAL. Capacity 100 grams, sensibility $1/10$ milligram.
Beam 6 inches long.

This instrument is unquestionably the greatest Balance value for 100 gram capacity and $1/10$ milligram sensibility on the market.

Price\$75.00

Balance No. 1115. All parts heavily gold plated. Price..... 85.00

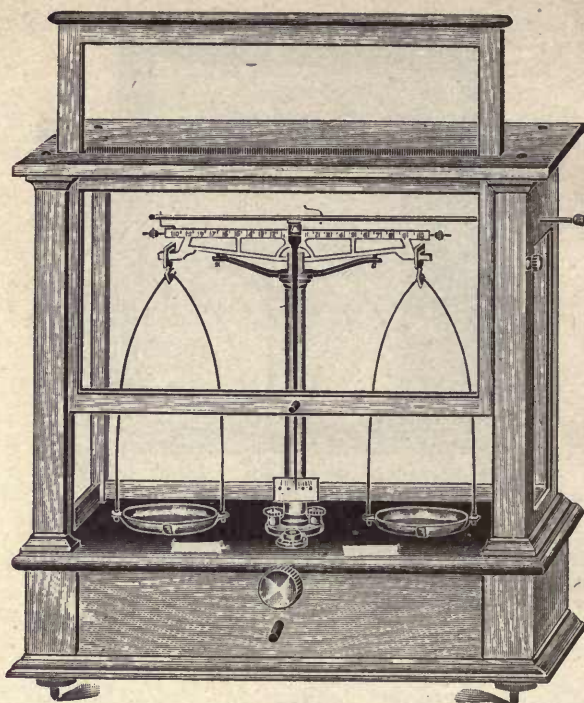


1117

1117 BALANCE, CELERITAS, ANALYTICAL. Designed to meet the needs of educational and commercial laboratories for an economical analytical balance. Beam, polished aluminum. Capacity 200 grams, sensibility $1/10$ milligram.

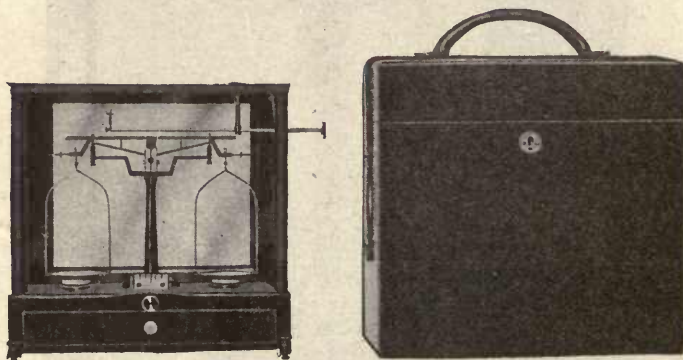
Price\$42.50

Price, mounted on black glass plate..... 50.00



1119

- 1119 BALANCE**—Analytical School Laboratory Balance. Satisfactorily meets the needs of Chemistry, Agriculture and Physics Laboratories requiring a well-built, high-grade balance of precision. Designed and made by an expert with over twenty years' actual experience in analytical balance making. Suitable for both teacher and student use. **Guarantee**—May be returned at our expense if after a fair trial it does not prove satisfactory. **Sensibility**— $1/10$ of a milligram under full load of 100 grams in each pan. **Capacity**—100 grams. Price\$35.00

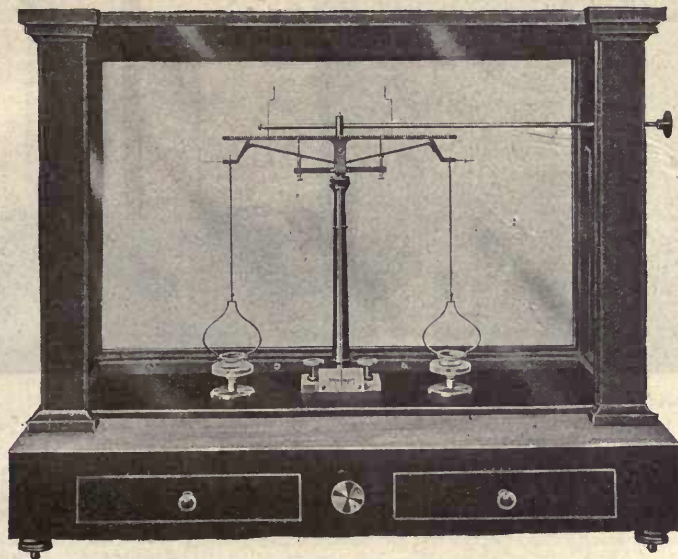


1121

- 1121 BALANCE**—Portable Analytical. The beam of this balance is made of aluminum alloy, 4 inches long, with 50 divisions on each side of the center knife edge; the bearings are of Russian agate. Total weight $6\frac{1}{2}$ pounds. Balance complete with set of first quality weights from 10 grams to $1/10$ milligram, and riders\$91.00

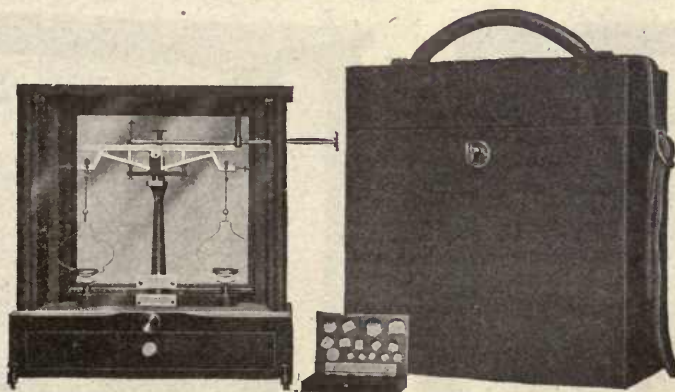
ASSAY BALANCES

In addition to the following assay balances, we can furnish any other special type known. For detailed information write to our Balance Department.



1123

- 1123 BALANCE ASSAY**—Troemner's. $7\frac{1}{2}$ -inch beam, sensibility $1/100$ gram. Beam is of special hard cold rolled aluminum. Fall-away pan and beam arrests. Full agate bearings. Aluminum pans with nickel silver hangers, black glass plate. Price\$123.50



1125

- 1125 BALANCE PORTABLE ASSAY**—Troemner's. The beam of this balance is 4 inches long and divided into 50 parts on each side of the center knife edge, and fitted with an improved locking apparatus, making it unnecessary to remove the beam from the fulcrum during transportation.

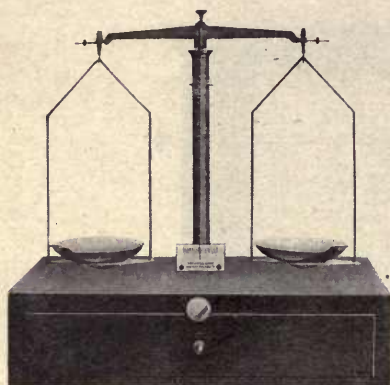
The balance is sensitive to $1/100$ milligram; the bearings are of agate. The case is made of seasoned mahogany, and French polished glass. Size $7\frac{1}{2}$ inches long, $2\frac{1}{2}$ inches deep, $8\frac{1}{4}$ inches high.

The carrying case is of walnut, fitted with lock and key and trunk strap handle. Size, $8\frac{1}{2}$ inches long, 5 inches deep, $9\frac{1}{2}$ inches high.

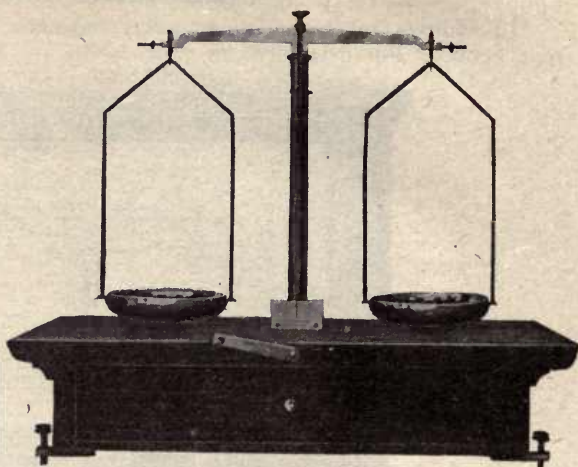
Total weight of outfit $6\frac{1}{4}$ pounds.

Price of complete balance with a set of first-quality adjusted platinum weights from 1 gram to $1/10$ milligram and riders.....\$91.00

PULP BALANCES



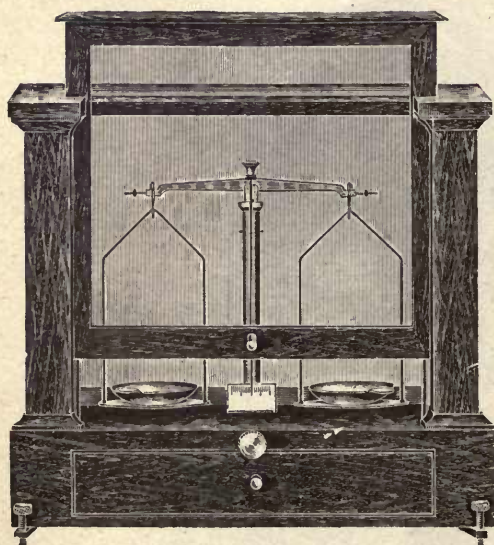
1127-1129



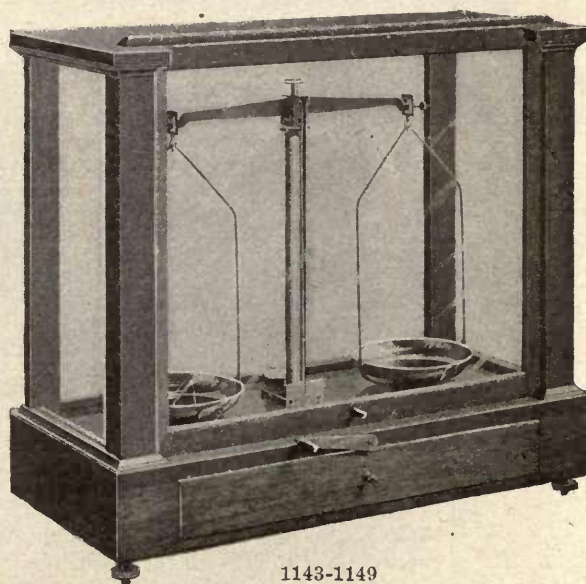
1131-1137

Pulp Balances illustrated above are used for Prescriptions, Ore, Sugar, Pulp, Jewelry, etc. Constructed of the very best materials, steel knife edges, and agate bearings, removable pans mounted on French Polished Mahogany box, with leveling screws. Balances Nos. 1131-1137 furnished with leveling screws and level.

Number	Capacity	Sensibility	Diameter of pans	Length of beam	Price
1127	2 oz or 75 grams	1/50 grain or 1 mgm.	75 m. m.	150 m. m.	\$13.00
1129	5 oz or 180 grams	1/30 grain or 2 mgm.	80 m. m.	180 m. m.	17.00
1131	10 oz or 300 grams	1/10 grain or 5 mgm.	100 m. m.	230 m. m.	25.00
1133	20 oz or 600 grams	1/10 grain or 5 mgm.	125 m. m.	270 m. m.	30.00
1135	50 oz or 1500 grams	1/5 grain or 10 mgm.	150 m. m.	300 m. m.	38.00
1137	100 oz or 3 kilo	1/3 grain or 20 mgm.	180 m. m.	370 m. m.	55.00

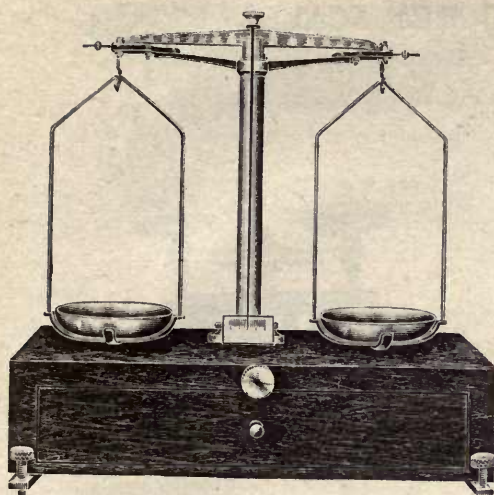


1139-1141

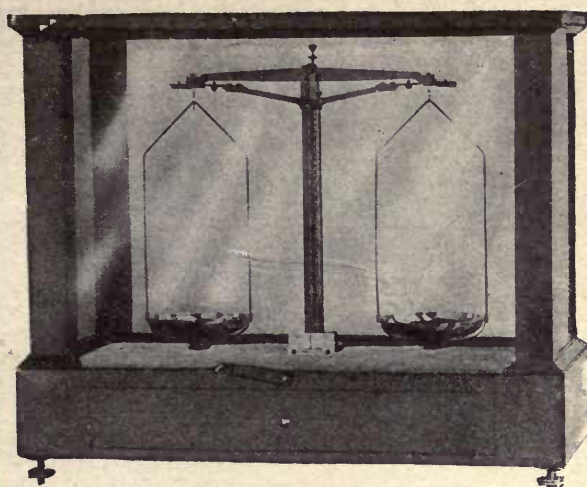


1143-1149

Number	Capacity	Sensibility	Diameter of pans	Length of beam	Price
1139	2 oz or 75 grams	1/60 grain or 1 mgm.	75 m. m.	150 m. m.	\$25.00
1141	5 oz or 180 grams	1/60 grain or 1 mgm.	80 m. m.	180 m. m.	29.00
1143	10 oz or 300 grams	1/30 grain or 2 mgm.	100 m. m.	230 m. m.	39.00
1145	20 oz or 600 grams	1/10 grain or 5 mgm.	125 m. m.	270 m. m.	46.00
1147	50 oz or 1500 grams	1/5 grain or 10 mgm.	150 m. m.	300 m. m.	60.00
1149	100 oz or 3 kilo	1/3 grain or 20 mgm.	180 m. m.	370 m. m.	85.00



1151



1153

1151 Pulp Balance Improved, illustrated above, used for Prescriptions, Sugar Ore, Pulp, etc., with steel knife edges and planes, constructed to the best materials, removable pans, has support for arresting beam and also end support for stirrups, relieving knife edges from all contact when Balance is at rest. Mounted on French Polished Mahogany box, furnished with level and leveling screws.

Capacity	Sensibility	Diameter of pans	Length of beam	Price
2 oz or 75 grams	1/60 grain or 1 mgm.	75 m. m.	150 m. m.	\$18.00
5 oz or 180 grams	1/60 grain or 1 mgm.	80 m. m.	180 m. m.	25.00
10 oz or 300 grams	1/30 grain or 2 mgm.	100 m. m.	230 m. m.	32.00
20 oz or 600 grams	1/30 grain or 2 mgm.	125 m. m.	270 m. m.	45.00
50 oz. or 1500 grams	1/5 grain or 10 mgm.	150 m. m.	300 m. m.	58.00

1153 Pulp Balance Improved, illustrates No. 1151 Balance mounted in French Polished Mahogany and glass case with front sliding door counterpoised, level and leveling screws.

Capacity	Sensibility	Diameter of pans	Length of beam	Price
2 oz or 75 grams	1/60 grain or 1 mgm.	75 m. m.	150 m. m.	\$30.00
5 oz or 180 grams	1/60 grain or 1 mgm.	80 m. m.	180 m. m.	35.00
10 oz or 300 grams	1/30 grain or 1 mgm.	100 m. m.	230 m. m.	49.00
20 oz or 600 grams	1/30 grain or 1 mgm.	125 m. m.	270 m. m.	61.00
50 oz or 1500 grams	1/5 grain or 10 mgm.	150 m. m.	300 m. m.	75.00

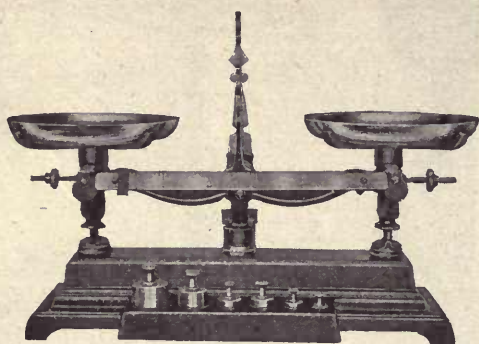
1155 Pulp Balance. Same Balances as above on box or in glass case, as desired, furnished with agate knife edges and planes, will cost net each extra, \$6.00.

1155A Balance. Same balance as No. 1151 on box with marble top, agate knife edges and planes.

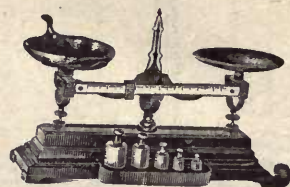
Capacity 250 grams. Price.....**\$45.00**
 Capacity 500 grams. Price.....**65.00**

We are admirably equipped for making repairs on any model of balance, either domestic or foreign. Estimates cheerfully given without obligation to the inquirer.

LABORATORY AND POCKET SCALES



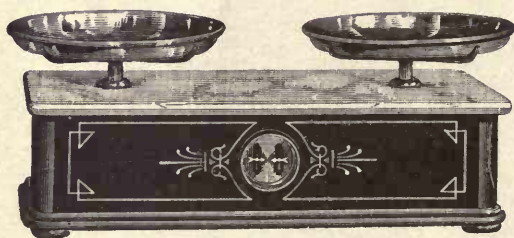
1157



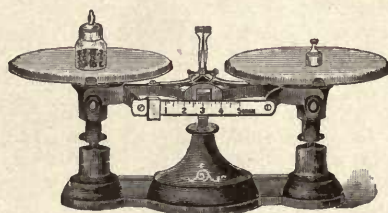
1159

- 1157 CELERITAS BAKERS' SCALE.** So named as it was originally made for their use, being a small balance with large pans; length, 12 inches; width, 9 inches; height, 5 inches; pans 5 inches in diameter; beam graduated up to 5 grams and divided into 1/10 gram; a set of accurate brass weights in block, which is fastened to the front of the scale, are included; capacity, 210 grams to 1/10 gram. Price.....\$13.00

- 1159 CELERITAS DISPENSING SCALE.** With side beam and sliding weight, to weigh 4 ounces. Handsomely finished; has 3 3/4-inch nickel-plated movable pans; a side beam in front of scale with a sliding weight; this beam is divided into 120 divisions, each division representing one grain; an extra row of metric divisions is placed on bottom edge of beam, each representing one decigram. Platform or shelf is attached to base of scale, in which are fitted a set of solid brass Troy weights, 2 ounces and down. Sensible to 1/2 grain; capacity 4 ounces. Price.....\$11.75



1161

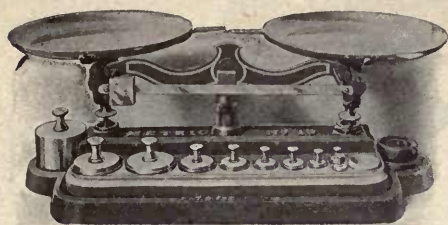


1163

- 1161 EBONY BOX SCALE.** In ebony box, gold lines; gilt dial; heavy nickel-plated pans; marble top.

No.	0	1	2
Diam. of pans.....ins.	7	8	9
Capacity .....lbs.	5	8	10
Price	each \$18.25	\$21.00	\$23.25

- 1163 BALANCE, HARVARD TRIP.** With two 6-inch round porcelain plates and side beam for laboratory work; capacity, 1 kilogram to 1/10 gram. Price.....\$7.50



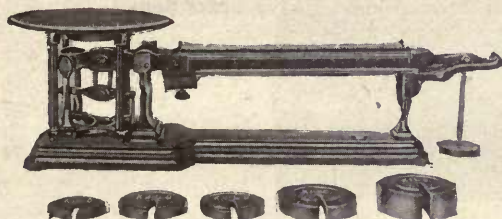
1165

1165 BALANCE—Metric Solution Scales—Two sizes. An even balance scale for making rapidly reagent or any other kind of composite solutions.

The scale has two movable Brass pans, and the weight rack is attached to the base of the scale, and in it are fitted the weights, which are made of solid brass. The scale is provided with a side beam in front, undivided, and is used for balancing the bottles or containers. With this scale can be made the most accurate solutions. Sensibility, $\frac{1}{2}$ gram.

Size No.	Diam. of Pans	Capacity	Price
1	9 in.	5 kilos. to 1 gram.....	\$26.00
2	5½ in.	1 kilo. to 1 gram.....	21.00

CELERITAS SOLUTION SCALE



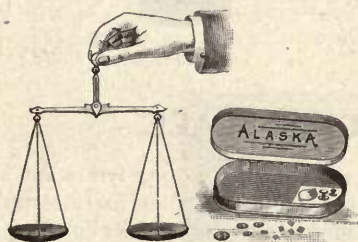
1167

1167 CELERITAS SOLUTION SCALE.

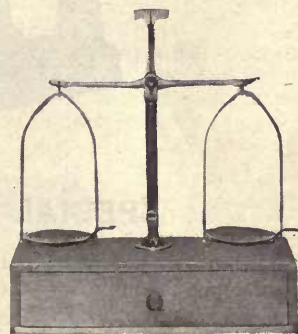
Capacity 20 kilos. (about 45 lbs.) It will weigh liquids with accuracy. The scale is provided with two weighing beams and sliding poises. One of these is divided into 100 parts, each part representing one gram; the other beam is divided into 10 parts, each part representing 100 grams. A bar with a sliding poise is placed under the weighing beam, for the purpose of balancing the empty

bottle or container, which is quickly done by sliding the poise along the bar until a correct balance is secured. Capacity, 20 kilos. Sensibility, 1 gram.

Price\$32.50



1169



1171

1169 MINERS' POCKET SCALES. Made in three sizes, and strictly first class. They are put up in neat tin boxes, with oval ends, and enameled green with bronze stripes; entire scale is of brass, including deep brass pans, hung with brass chains; full set of accurate weights are included.

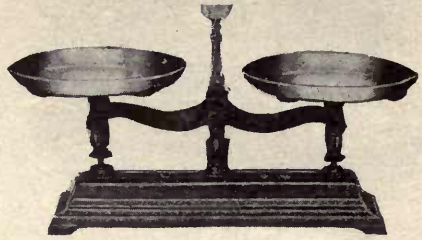
Capacity .....	.....oz.	$\frac{1}{2}$	2	4
Price	each	\$2.75	\$3.25	\$4.50

1171 ARMY PRESCRIPTION SCALE. On polished box; scale can be taken apart and packed away in drawer of box; all parts nickel-plated; including a set of weights from 2 drams to $\frac{1}{2}$ grain.

Beam	ins.	6	7	8
Each		\$5.00	\$6.50	\$8.00



1173

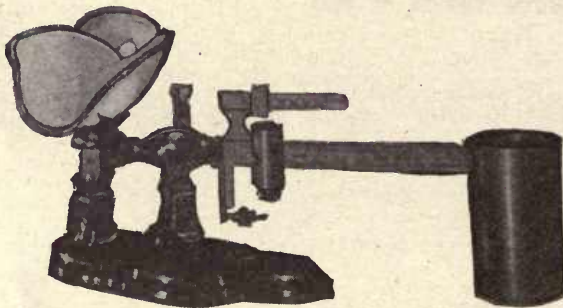


1175

1173 PRESCRIPTION BALANCE, in cherry mahogany box with marble top and hinged cover; has $2\frac{3}{4}$ -inch nickel pans; thoroughly reliable and substantial. Capacity, 1 oz. Sensibility, $\frac{1}{4}$ gram.....**\$19.00**

1175 ROBERVAHL BALANCE, for coarse weighing. Heavy brass pans.

Capacity	lbs.	1	2	5
Diameter of pans.....	ins.	$5\frac{1}{2}$	8	9
Each		\$8.50	\$9.75	\$11.75



1179

SPECIAL "FOUR-IN-ONE" SCALE

This scale, designed and manufactured by us, satisfies a long-felt want in the grain trade, for a small, complete office scale for weighing samples for moisture test and for determining test weights per bushel, dockages, weights for mailing samples, etc.

This "Four-In-One" Agate Bearing Scale is the most complete, compact, accurate and adaptable scale made satisfying these many needs. It renders the following weights:

Equipped with a specially designed brass scoop for a convenient pouring of grain in flasks for moisture test, or in envelopes for mailing.

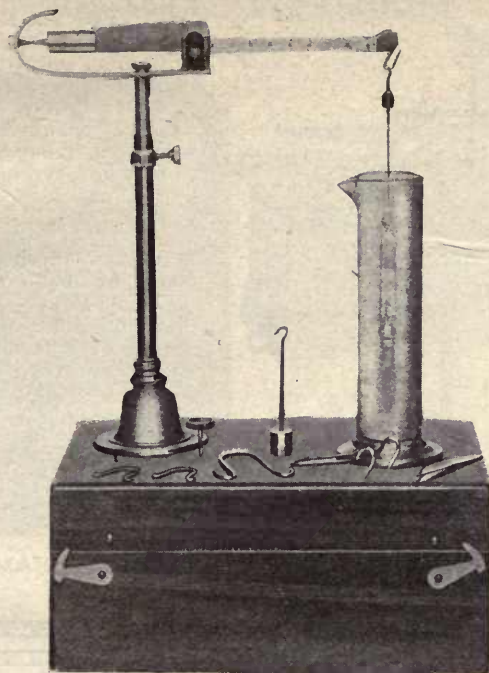
Strongly made, with no springs or steel bearings to rust or become inaccurate. Large readable figures on beams. Highly painted and decorated.

Effectively used in connection with grain sieves described upon Pages 10 and 11.

Quick breaking and guaranteed accurate. Will do the work of four ordinary scales designed especially to satisfy any one of the above needs and at the small price of one. Used by country shippers, receivers and grain men everywhere.

Price**\$25.00**

SPECIFIC GRAVITY BALANCES



1181

This balance is designed to give liquid densities only. It will do this to the fourth decimal place. With jar, riders, plummet, wood case, forceps and weights.

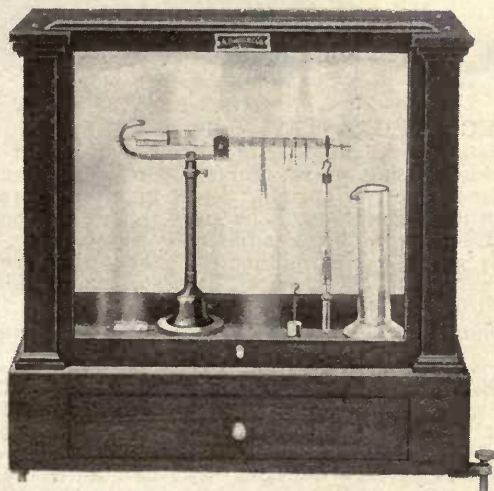
This balance is American made, and manufactured to our order.

1181 —Price\$25.00

1181A—Plummet only. Price..... 7.50

1181B—Set (8) Riders only. Price..... 3.50

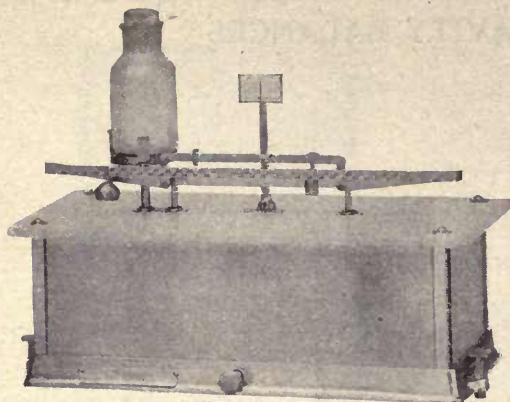
1182 **SPECIAL WESTPHAL SPECIFIC GRAVITY BALANCES.** Agate knives and planes, in mahogany case with drawer, screw feet and level. Balance fastened in case without raising apparatus to a black plate glass base inside of case. Complete with plummet jar and riders. Price complete\$60.00



1182

1181B RIDERS FOR WESTPHAL SPECIFIC GRAVITY BALANCES

Weight of rider.....	5	.5	.05	.005 Grams	15 Grams Brass
Price	\$0.35	.35	.55	.55	Hanging Weight
					1.00



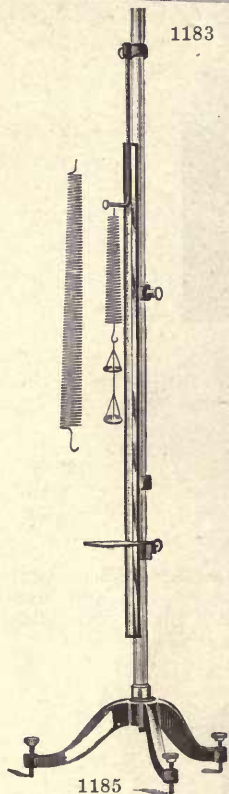
1183

1183 TORSION GRAVITY BALANCE. Sensitiveness, 2 milligrams; sensitiveness, $1/32$ grain. Recording beams, upper, .01 by .0001; lower, 1.40 to .70 by .01. Tare beam, bottle, 100 C. C.; case, metal and ground glass. Arrest, measurements, $12\frac{3}{4}$ by 6 by $9\frac{3}{4}$ inches. Price with one bottle\$50.00

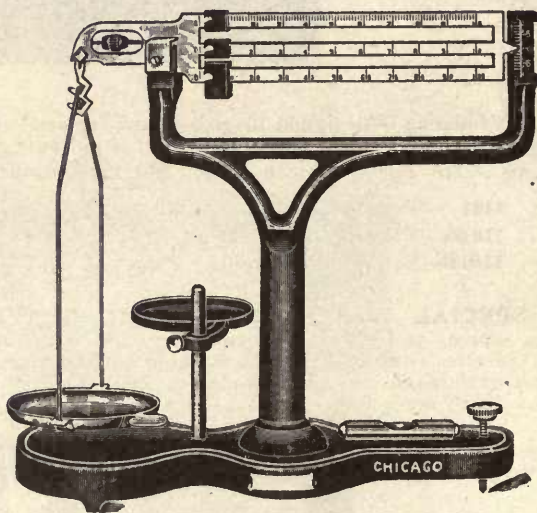
When ordering extra bottles give serial number of balance.

This balance is used for the ready determination of specific gravity of liquids, the result being obtained direct from the reading of the beam without calculation or the use of loose weights. The range is from .7000 to 1.4000.

CELERITAS TRIPLE BEAM BALANCE



1185



1187

1185 BALANCE, SPECIFIC GRAVITY. Jolly Spiral Spring. Mirror Scale.

This balance is a decided improvement over the general style of apparatus of this kind, being made of metal throughout and handsomely finished. It consists of an upright, 3 feet high, supported by a tripod base fitted with leveling screws. The stage, scale and hook are clamped to the upright, all three being adjustable separately. The improved mirror scale is graduated in millimeters. The pans are of aluminum suspended on very sensitive springs. Two springs, a high and low tension, are included with each balance.....\$25.00

Used for determining specific gravity of minerals, etc., and in laboratories of rubber factories.

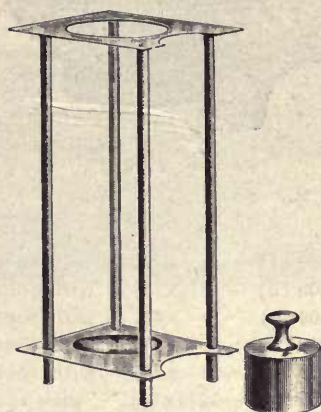
1187 IMPROVED CELERITAS TRIPLE BEAM LABORATORY BALANCE.

This balance is one of the most popular of our specialties. It has a capacity of 111 grams, a sensibility of 0.01 gram, and reads directly on the aluminum beam to 0.01 gram. The beam is engine divided and is tested and adjusted at each division. The two lower weights are supplied with spring clips to insure accurate setting. The weights do not interfere, and they are attached to the beam so that they cannot be lost. A milled head lifts the center knife edge from its bearing when not in use. The stand is neatly enameled and is supplied with a leveling screw, spirit level, and swinging support for specific gravity work. The pan is movable and its hanger has an extra hook for specific gravity.....\$17.50

BALANCE ACCESSORIES



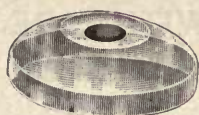
1189



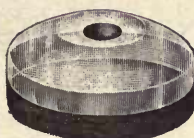
1191



1193



1195



1195 (a)



1197



1199



1199 (a)



1201

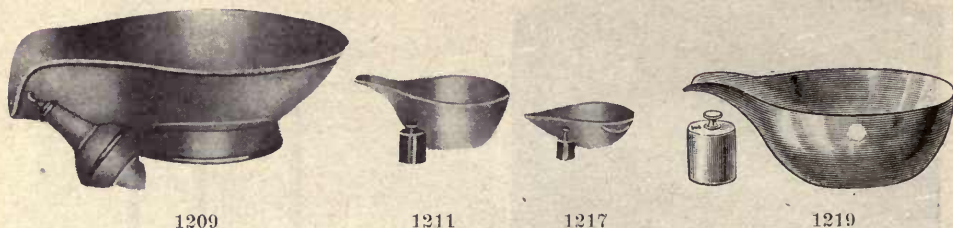


1203

Number		Price
1189	—Balance Covers—Of Rubber Sheeting, made to order, each.....	\$2.00 to \$4.00
1191	—Weighing Tube Support—Nickel plated, for use in either vertical or horizontal position, each	2.00
1193	—Spirit Level—Circular, of brass, 1 inch diameter, each.....	4.00
1195	—Balance Rests—Of glass, for use under leveling-screws of balance, each .....	.15
1195 (a)	—Balance Rests—Of glass with rubber cushion, for use under leveling-screws of balance, each .....	.40
1197	—Balanced Watch-Glasses—Without handles, accurately adjusted for analytical work	1.00
	Diameter, inches	2½ 2¾ 3
	Per pair	\$1.00 \$1.00 \$1.00
1199	—Forceps—Brass, curved form, polished and lacquered, each.....	.50
1199 (a)	—Forceps—Brass, straight form, polished and lacquered or nickeled, each..	.50
1201	—Forceps—Brass, curved form, ivory tipped, polished and lacquered or nickeled, each	1.50
1203	—Forceps—With curved ivory tips, for handling small weights, each.....	1.50
1205	—Pans for Button Balances—German silver oxidized black, per pair.....	2.50
1207	—Magnifier—For index-plate, adjustable and portable, each.....	5.50

BRASS SCOOPS WITH TARE WEIGHT

FOR BULLION BALANCES



	Price
1209 (a) — 7 x 9 " with foot.....	\$10.00
1209 (b) — 8½x11½" with foot.....	10.50
1209 (c) —10 x13 " with foot.....	11.00
1209 (d) —11 x15 " with foot.....	11.25
1209 (e) —12 x15½" with foot.....	11.75
1209 (f) —12¾x16½" with foot.....	13.00
Spun Brass Tare Ball for Counter Balancing Scoop.....	2.60

GERMAN SILVER SCOOPS WITH TARE WEIGHTS

FOR WEIGHING SUGAR SAMPLES

	Price
1211 —With Long Spout	\$4.25
1211 (a)—With Short Spout	4.25

ALUMINUM SCOOPS WITH TARE WEIGHTS

	Price
1213—10 grams capacity	\$2.50
1215—20 grams capacity	2.60
1217—30 grams capacity	2.95
1219—Dish, Pure Nickel, deep form, with tare weight, each.....	4.25



1221—SCALE PANS, with handles—

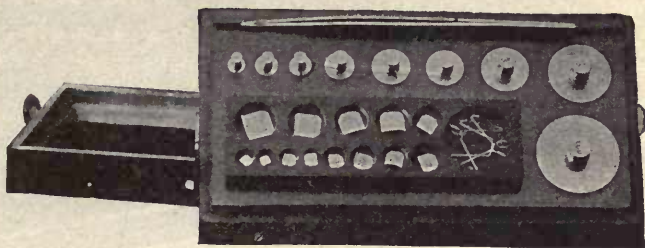
Glass, 2½, 2¾, 3 in.....	Per pair	\$0.75
Nickel, 2½, 2¾, 3 in.....	Per pair	1.50
Aluminum, 2½, 2¾, 3 in.....	Per pair	2.00

We do general Instrument repairing as well as Balance repairing and adjusting. Weights refinished and accurately adjusted. Our Balance Repairing Department includes the adjustment of the instrument and also the refinishing of all metal parts and cases.

WEIGHTS



1311



1315

1311 Weights adjusted to meet the requirements as set forth by the U. S. Bureau of Standards. The gram Weights are made of Tobin bronze. They are made of one piece heavily gold-plated. The fractions of the gram of Platinum.

In mahogany, loose or hinged covered, velvet lined boxes. Each Weight fitted in separate compartment.

Grams		Milligrams		Price
10	to	1		\$40.00
two 20	"	1		45.00
one 20	"	1 and three riders		45.00
50	"	1	" " "	48.00
100	"	1	" " "	52.00
200	"	1	" " "	60.00
500	"	1	" " "	75.00
1 kilo	"	1	" " "	88.00

1313 WEIGHTS—GRAIN. (See above).

Grains			Price
10	to	1/100 grain	\$24.00
100	"	1/100 grain	40.00
1000	"	1/100 grain	52.00

1315 WEIGHTS OF PRECISION (First Quality)

These Weights are adjusted accurately for general use, where weights of First Quality are desired. Gram weights are of brass screw-knob, polished and lacquered. The fractions of the gram are of Platinum from 500 mgm. to 50 mgm., and from 20 mgm. to 1 mgm. of aluminum.

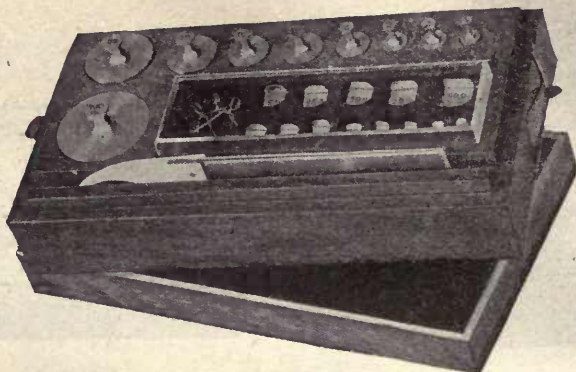
In mahogany, loose or hinged covered, velvet lined boxes. Each weight fitted in separate compartment.

Grams		Milligrams		Price	Price Gold-plated
		5/10 to 1/10		\$ 2.00	....
10	to	1/10		20.00	\$21.50
two 20	"	1 and three riders		21.00	23.00
one 20	"	1	" " "	21.00	23.00
50	"	1	" " "	22.00	25.00
100	"	1	" " "	24.00	28.00
200	"	1	" " "	30.00	37.00
500	"	1	" " "	36.00	44.00
1 kilo	"	1	" " "	43.00	53.00

1317 WEIGHTS, GRAIN. (See above.)

Grains			Price
10	to	1/1000 grain	\$20.00
100	"	1/1000 grain	21.00
1000	"	1/100 grain with 3 riders	23.00

SPECIAL SETS OF METRIC WEIGHTS FOR CHAINOMATIC BALANCES



1319

- 1319 WEIGHTS, METRIC.** Adjusted to a tolerance of Class A, Bureau of Standards, double checked.

All weights to 500 milligram are lacquered brass.

All weights from 500 milligram to 20 milligram are of platinum.

All weights from 20 milligram to 1/10 milligram are of aluminum.

In polished mahogany boxes, lined with velvet, each piece fitted separately with glass cover on small weights. Furnished with forceps in sets from 20 grams.

10 grams to 50 milligram	\$21.00
20 grams to 50 milligram	22.00
50 grams to 50 milligram	23.00
100 grams to 50 milligram	25.00
200 grams to 50 milligram	27.00

- 1321 WEIGHTS, Separate.** Brass weights, single, adjusted to meet requirements U. S. Bureau of Standards. One piece, gold plated, double checked.
- | | | | | | | | | | | |
|-------------|---------|------|------|------|------|------|------|------|------|------|
| Grams | 1000 | 500 | 200 | 100 | 50 | 20 | 10 | 5 | 2 | 1 |
| Price | \$10.50 | 8.75 | 7.60 | 7.00 | 4.10 | 3.80 | 2.60 | 2.40 | 2.20 | 2.00 |

- 1323 WEIGHTS, Separate.** Brass weights, single, screw knob, first quality, gold plated, single checked.
- | | | | | | | | | | | |
|-------------|---------|------|------|------|------|------|------|------|------|------|
| Grams | 1000 | 500 | 200 | 100 | 50 | 20 | 10 | 5 | 2 | 1 |
| Price | \$ 7.50 | 5.75 | 4.60 | 4.00 | 2.10 | 1.80 | 1.60 | 1.40 | 1.20 | 1.20 |

- 1323a WEIGHTS, Separate.** Brass, lacquered.
- | | | | | | | | | | | |
|-------------|---------|------|------|------|------|------|------|------|-----|-----|
| Price | \$ 6.00 | 4.25 | 3.10 | 2.50 | 1.60 | 1.20 | 1.10 | 1.00 | .80 | .80 |
|-------------|---------|------|------|------|------|------|------|------|-----|-----|



1325

- 1325 WEIGHTS,** Brass, polished and lacquered.
- | | |
|---|--------|
| Set of two weights—13.024 and 26.048. Price..... | \$4.00 |
| Set of three weights—13.024 and 26.048 and 52.096. Price..... | 5.00 |
- 1327 WEIGHTS,** Above weights brass, gold plated.
- | | |
|------------------------|--------|
| 2 weights. Price | \$4.50 |
| 3 weights. Price | 5.50 |



1329



1331

1329 WEIGHTS, Assayton. Furnished in mahogany box as illustrated; of brass polished and lacquered. These weights are accurately adjusted to a standard of 29.1666 grams equals 1 Assayton. One A. T. contains as many milligrams as there are troy ounces in a ton (avoirdupois, 2000 pounds). Therefore, if one A. T. of ore assays one milligram the ton contains one troy ounce.

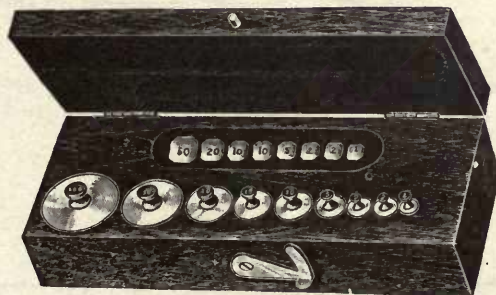
	Price
4 A. T. to 1/20 A. T.....	\$9.00
1 A. T. to 1/20 A. T.....	4.50
2 A. T. to 1/20 A. T.....	6.75
Containing 1 A. T., 1/2, 1/3, 1/4, 1/5, 1/10 and 1/20 A. T.....	6.00

1331 WEIGHTS, Second Grade. Gram Weights are of brass, two pieces, polished and lacquered, furnished in mahogany box with hinged cover, as per illustration. Fractions of the gram are of German silver and Aluminum.

Grams		Milligrams	Price
1	to	1	\$ 7.00
10	"	1	8.50
20	"	1	9.50
50	"	1	12.00
100	"	1	14.00
200	"	1	17.00
500	"	1	20.00
1 kilo.	"	1	27.00

1333 WEIGHTS, Factor. Brass polished and lacquered.

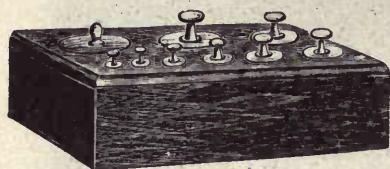
	Price, Net
Carbon Factor, 2.7273 grams	\$1.30
1/2 Carbon Factor, 1.3636 grams	1.30
1/4 Silicon Factor, 1.1755 grams	1.30
Phosphorous Factor, 1.63 grams	1.30
1/10 Silicon Factor, 0.4702, Platinum	7.00



1335

1335 COMMERCIAL, Brass Polished and Lacquered.

Gram		Price	Troy Ounces		Price
20	to	1 centigram	1	to	1/4 grain
50	"	1 centigram	two	2	1/4 grain
100	"	1 centigram		5	1/4 grain
200	"	1 centigram		10	1/4 grain
500	"	1 centigram		20	1/4 grain
500	"	1 milligram		50	1/4 grain
1 kilo	"	1 centigram		100	1/4 grain
1 kilo	"	1 milligram		200	1 grain
				500	1 grain



1337



1339

1337 WEIGHTS, Commercial. Third Grade. In block. Brass Weights Polished.

Gram			Price	Troy Ounces			Price
20	to	1 centigram	\$ 2.00	1	to	1/4 grain	\$ 2.50
50	"	1 centigram	2.50	two	"	1/4 grain	3.50
100	"	1 centigram	3.00	5	"	1/4 grain	4.25
200	"	1 centigram	4.00	10	"	1/4 grain	5.75
500	"	1 centigram	6.00	20	"	1/4 grain	10.00
500	"	1 milligram	7.50	50	"	1/4 grain	17.50
1 kilo	"	1 centigram	10.00	100	"	1/4 grain	27.00
1 kilo	"	1 milligram	11.50	200	"	1 grain	40.00
				500	"	1 grain	80.00

1339 WEIGHTS, Avoirdupois, Iron. These weights are made of cast iron, with sealing hole on top of the weight. This hole is filled with lead as the adjusting medium. On this the sealer's stamp can be placed. Furnished in Japanned black, as follows:

1 lb. to 1/2 oz.	\$1.75
2 lbs. to 1/2 oz.	2.25
4 lbs. to 1/2 oz.	3.25
7 lbs. to 1/2 oz., total 15 lbs.	5.75
10 lbs. to 1/2 oz., total 20 lbs.	8.50



1341

1341 WEIGHTS, Metric Iron.

1 kilogram to 10 grams, per set	\$ 3.25
2 kilogram to 10 grams, per set	4.25
5 kilogram to 10 grams, per set	8.25
10 kilogram to 10 grams, per set	13.00

Owing to the present regulation of platinum consumption by the Government officials, we have discontinued the furnishing of platinum fractions almost entirely. In the place of fractional weights made of platinum we are now supplying these made of Gold, Rhotanium and other non-oxidizing metals. These weights have been tested very carefully and found to be extremely accurate. We recommend them to be equal in every respect to the platinum fractional weights.



a



b

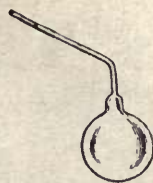


c



d

1400



1402

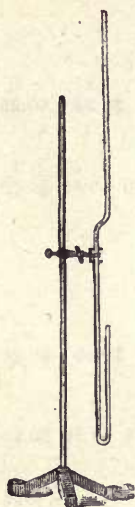
1400 BALLOON, Glass, for weighing gases

a.	b.	c.	d.
\$0.75	1.50	3.00	2.50

See also Chancel's Bulb.

1402 BALLOON, Glass, Dumas', for determining the specific gravity of vapors.

Capacity, c. c.....	30	50	100	150
Each	\$.40	.50	.60	.75



1420



1424



1431



1410



1434

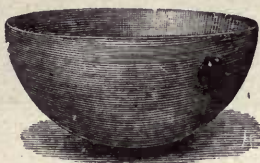
1436

- 1410 BAROMETER, Aneroid, brass case with 5-inch porcelain dial and curved thermometer\$15.00
- 1420 BAROMETER, Bunsen's Siphon, graduated in millimeters, with support.. 12.00
- 1422 BAROMETER, Bunsen's Siphon, the graduated tube only, not filled..... 3.00
- 1424 BAROMETER, Oak Frame, plain front, oxidized scale divided to 1-10 inches, sliding metal pointer; with thermometer..... 15.00
- 1426 BAROMETER, U. S. Weather Bureau's Standard with vernier reading to 1-1000 inch, thermometer, etc..... 60.00
- 1430 BAROMETER, same, with both English and metric scales..... 67.50
- 1431 BAROMETER, same, with oak board, opal glass reflectors..... 72.50
- 1434 BAROMETER TUBE, Straight, 33 to 36 inches long, for Torricelli's experiment35
- 1436 BAROMETER TUBE, Bent, with bulb..... .50
- BAROMETER TUBING, see TUBING, Glass.
- BASKETS, see TEST TUBE, Baskets.

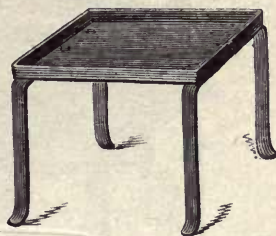
BATHS



1454

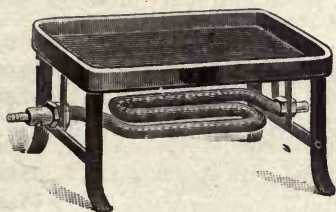


1456



1458

- | | | | | | | | |
|------|---|--------|-----|--------|------|-------|-----|
| 1454 | BATH, Sand Bath, of sheet iron, shallow. | | | | | | |
| | Diameter, inches..... | 3 | 4 | 5 | 6 | 8 | 10 |
| | Each | \$0.10 | .12 | .15 | .20 | .30 | .50 |
| 1456 | BATH, Sand Bath, Iron, hemispherical, deep form. | | | | | | |
| | Diameter, inches..... | 3 | 4 | 5 | 6 | 8 | 10 |
| | Each | \$0.20 | .25 | .30 | .40 | .60 | .85 |
| 1458 | BATH, Sand Bath, or hot plate, an iron tray on four legs. | | | | | | |
| | Size, inches..... | | | 6x8 | 8x10 | 10x12 | |
| | Each | | | \$2.50 | 3.00 | 3.50 | |



1460

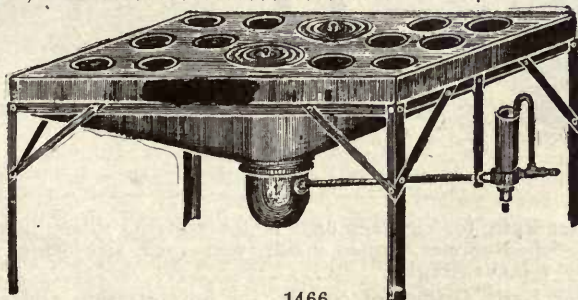


1462



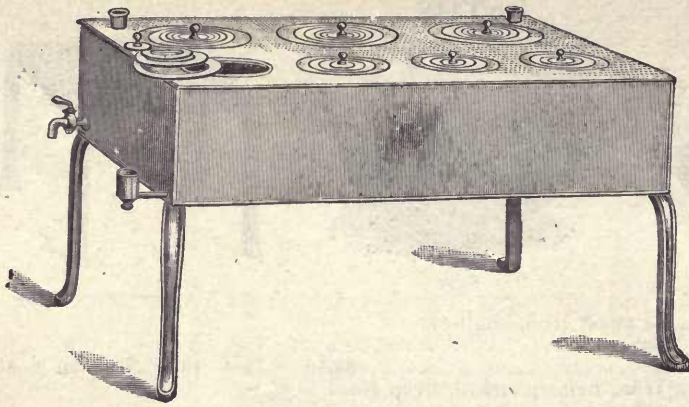
1464

- | | | | | | | | | | |
|------|---|--------|------|------|------|------|--|--|---------|
| 1460 | BATH, Sand Bath, Ruedorff's, of wrought iron. Burner adjustable in height | | | | | | | | \$10.00 |
| 1462 | BATH, Water Bath, heavy copper, tin lined, with concentric rings and cover, handles and steam escape. | | | | | | | | |
| | Diameter, inches..... | 4 | 5 | 6 | 8 | 10 | | | |
| | Price, each..... | \$1.25 | 1.50 | 2.00 | 3.00 | 5.75 | | | |
| 1464 | BATH, Water Bath, heavy copper, tin lined, with Kekule's constant water level. | | | | | | | | |
| | Diameter, inches..... | 4 | 5 | 6 | 8 | 10 | | | |
| | Price, each..... | \$1.75 | 2.00 | 2.50 | 3.50 | 6.25 | | | |



1466

- | | | |
|------|---|---------|
| 1466 | BATH, Water Bath, Wiley, pat. May 5, 1914. Heavy copper 25x14, ½-inch bath proper 2 inches deep. Devised to reduce time in getting up steam. Gas heated, with constant level regulator.
Price, with rings..... | \$50.00 |
|------|---|---------|



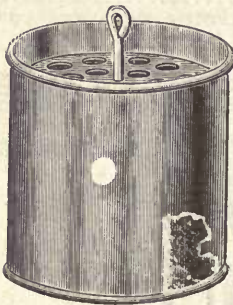
1472



1476

Water Baths of polished copper, tinned inside, with concentric rings and cover, provided with stopcock and Kekule's water level regulator, with extra sheet iron bottom and supported by four detachable legs.

- 1472 BATH, Water Bath, size 23 by 13½ by 5 inches, seven openings; three of 6 inches diameter and four of 4 inches diameter, with rings and cover\$25.00
- 1472(a) BATH, Water Bath, same, but arranged with coil to be heated by steam.. 30.00
- 1472(b) BATH, Water Bath, same, but electrically heated..... 57.50
- 1474 BATH, Water Bath, same as No. 1480, but size 28 by 14 by 5 inches, eight openings, 5 inches diameter, with rings and cover..... 30.00
- 1474(a) BATH, Water Bath, same, but with coil, to be heated with steam..... 35.00
- 1474(b) BATH, Water Bath, same, but electrically heated..... 65.00
- 1475 BATH, Water Bath, size 14 by 14 by 5 inches, four openings, 5 inches diameter, with rings and cover..... 20.00
- 1475(a) BATH, Water Bath, same, but arranged with coil to be heated by steam.. 25.00
- 1475(b) BATH, Water Bath, same, but electrically heated..... 55.00
- 1476 BATH, Water Bath, with test tube rack, as used by Dr. Blair in iron analysis, made of polished copper, not tinned, 7 inches diameter, for ten test tubes 6x½ in..... 3.75

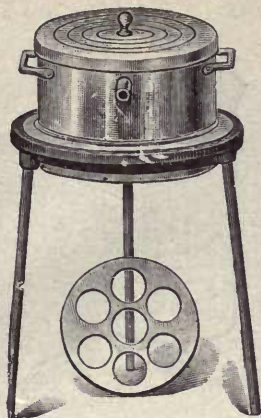


1480



1488

- 1480 BATH, Water Bath, for eighteen 6x½ inch dissolving tubes; made of heavy polished copper, tinned inside, with rack, size 6 inches diameter by 7 inches high\$ 5.00
- 1488 BATH, Water Bath, Griffin, of copper, for hot filtration and evaporation, size 13 by 7 by 5 inches, tin-lined, with copper funnel, and one 5-inch hole with four concentric rings and cover. It is provided with a constant water level, an extra sheet iron bottom, and rests on four detachable legs 12.00



1493



1496

- 1493 BATH, Water Bath**, of polished copper, tin-lined. The body of this bath is made of one piece (seamless), with concentric rings and cover, steam escape and extra plate perforated for test tubes.

Diameter	5	6	8	inches
	4	5	7	rings

Each	\$3.50	4.50	6.50
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- 1495 BATH, Water Bath**, same as No. 1493, but with tripod 9 inches high; three sizes.

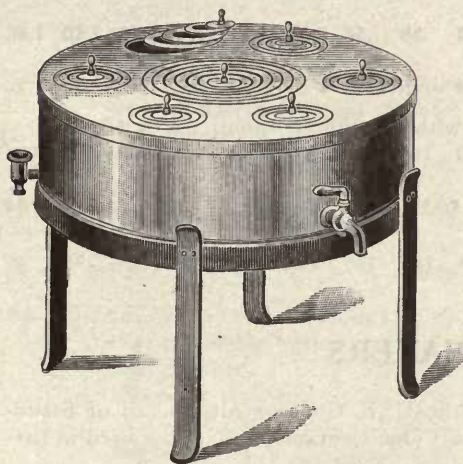
Diameter	5	6	8	inches
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Each	\$4.00	5.00	7.00
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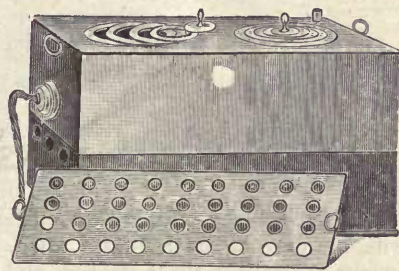
- 1496 BATH, Water Bath**, funnel shape polished copper, tin-lined, with concentric copper rings, cover and constant water level, including tripod, 8 inches high, in two sizes.

Diameter	6	8	inches
	5	7	rings

Each	\$3.75	5.00
------------	--------	------



1498



1499

- 1498 BATH, Water Bath**, large, round, made of heavy copper, tin-lined, on removable iron stand, has six openings, each 3 inches diameter, and one opening, 6 inches diameter, with concentric rings and cover, provided with stopcock and water level, size 16 inches diameter, 4 inches deep and 13 inches high, including stand.....\$20.00

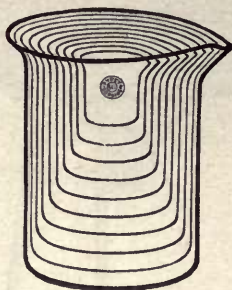
- 1499 BATH, Water Bath**, Electrically heated, of polished copper, with two removable covers, the one cover with two 5-inch openings and concentric rings, and the other with thirty-six $\frac{7}{8}$ -inch holes for test tubes. Size $14\frac{1}{2}$ by $6\frac{1}{2}$ by 3 inches deep; $7\frac{1}{2}$ inches high, including base.

Provided with Automatic Cut-Out that cuts off current if Bath is allowed to run dry..... 40.00

Any size and style of Water Baths can be furnished on short notice.

Estimates cheerfully given

BEAKERS



1531



1533

PYREX BEAKERS

The manufacturers of Pyrex Glass have developed a low expansion borosilicate glass possessing a combination of qualities which render it superior in many respects to any glass of similar type heretofore available.

Composition

The simple chemical composition of the glass is an advantage as regards possible contamination of liquids in contact with it. It contains no metals of the magnesia-lime-zinc group and no heavy metals.

1531 BEAKERS, Griffin Low Form, with or without spout, Pyrex Glass.

Capacity, c. c.	50	100	150	250	400	600	800	1000	1300	1500	2000	2500	3000	4000
List price, each, in broken package	\$.016	.17	.19	.23	.27	.33	.38	.54	.65	.73	.98	1.20	1.40	1.80
Number pieces in original package	216	156	156	168	84	72	48	48	24	24	12	12	12	10

1533 BEAKERS, Berzelius or Usual Form, with or without spout, Pyrex Glass.

Capacity, c. c.	100	150	200	300	400	500	600	800	1000
List price, each, in broken package	\$.017	.19	.21	.25	.27	.29	.33	.38	.54
Number pieces in original package	156	120	168	144	60	60	48	48	36

NONSOL BEAKERS

In accordance with the specifications of the U. S. Government Bureau of Standards, the designation Milliliter (ml.), instead of Cubic Centimeter (c. c.), is used in listing the capacity of these Beakers and Flasks.

1535—BEAKERS, Griffin Low Form, with spout, Nonsol Glass.

Capac., ml.	30	60	90	120	150	180	250	300	350	500	600	700	1000	1400	2000
Each, net	\$.013	.14	.15	.16	.17	.18	.19	.21	.23	.27	.30	.33	.50	.70	.91
Number pieces in original package, doz.	12	12	12	30	24	24	12	12	12	12	12	6	6	3	3

1535 (a) BEAKERS. Tall Form, with or without spout. Nonsol Glass.

Capacity, ml.	30	60	90	120	180	250	300	350	500	700	1000	1200
Each, net	\$.013	.14	.15	.16	.18	.19	.21	.23	.27	.33	.50	.55
Number pieces in original package, doz.	12	12	12	30	24	12	12	12	12	6	6	3

Unless otherwise stated beakers with lips supplied.

It is advisable when ordering to fully describe articles as in above headings.



1537



1538



1543



1549

1537 BEAKER. Very heavy, tumbler shape, with lip.

Capacity c.c.	200	250
Each	\$0.15	.15
Per dozen	1.50	1.50

1538 BEAKER. Aluminum.

Capacity c.c.	125	250	500	1000	2000
Each	\$0.75	1.00	1.50	2.50	3.75

1540 BEAKER, Thin Copper, tin lined, Griffin's form with lip.

Capacity, c.c.	125	250	500	1000	2000
Each	\$0.75	1.00	1.50	2.50	3.75

1542 BEAKER, Thin Copper, Nickel Plated both inside and out for sugar analysis.

Capacity, c.c.	125	250	500	1000	2000
Each	\$1.00	1.25	1.75	2.75	4.00

1543 BEAKERS, Porcelain Coor's, without lip, glazed inside and outside with exception of outside bottom surface.

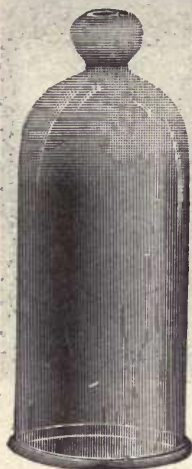
Size number:.....	1	1a	2	3	3a	4	5	6
Diameter rim, mm.....	62	66	74	87	93	103	114	122
Diameter body, mm.....	52	60	65	78	83	93	104	110
Height, mm.....	93	108	118	143	154	167	198	200
Capacity, c.c.	165	125	340	580	700	970	1500	1775
Each	\$0.75	.90	1.00	1.20	1.50	1.80	2.50	4.00

1545 BEAKERS, Porcelain, Coor's, with lip, glazed inside and outside with the exception of outside bottom surface.

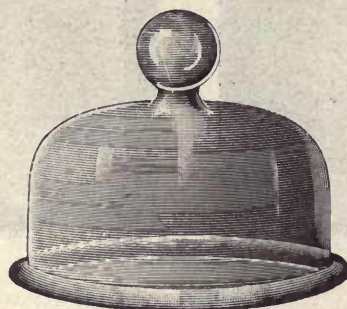
Size number:.....	1	1a	2	3	3a	4	5	6
Diameter rim, mm.....	62	66	74	87	93	103	114	122
Diameter body, mm.....	52	60	65	78	83	93	104	110
Height, mm.....	93	108	118	143	154	167	198	209
Capacity, c.c.	165	250	340	580	700	970	1500	1775
Each	\$0.85	1.00	1.10	1.35	1.65	2.00	2.75	4.25

1547 BEAKERS, Porcelain Dye Pot, glazed inside and outside to the heavy supporting rim. Without lip. Diameter rim, 120 mm; body, 108 mm; height, 188 mm; capacity, 1500 c.c. Each\$2.75**1549 BEAKERS, Fused Silica.** Vitreosil beakers have been produced in response to a wide demand for an article capable of resisting higher temperatures than glass, and having the characteristic resistance to extreme temperature changes possessed by the Vitreosil laboratory crucibles and basins. The beakers are made in the standard tall and low forms and are supplied with or without lips at the same price.

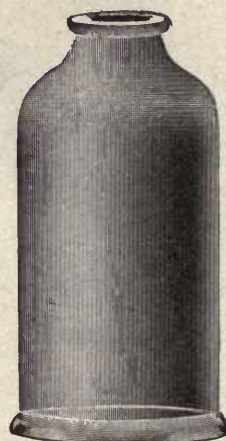
Capacity in c.c.....	50	100	150	200	250	400	500	600	800
Price, each	\$0.90	1.00	1.10	1.20	1.45	1.70	1.95	2.20	2.65



1552



1550



1554

1550—BELL GLASSES, Low form, with knob.

Height, inches.....	1½	2¼	3½	4	4¼	5	8	10	11
Diam.	3	4	5	6	7	8	10	12	16
Each	\$0.60	.75	1.00	1.30	1.55	1.75	2.60	3.25	5.00

1552 BELL GLASSES, Tall form, with knob.

Height, inches	6	8	9	11	14	15	15	18
Dia., inches	3	4	5	6	6½	7	8½	10
Capacity	pt.	qt.	½	1	1½	2	3	5 gal.
Each	\$0.75	1.00	1.25	1.50	1.75	2.00	4.25	6.55

1554 BELL GLASSES, Open top.

Height, inches	6	8	9	11	15	15	18
Diam. inches	3	4	5	6½	7	8½	10
Capacity	pt.	qt.	½	1	2	3	5 gal.
Each	\$0.65	.90	1.35	1.50	2.00	3.80	6.00



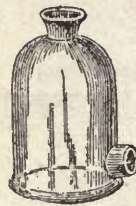
1556



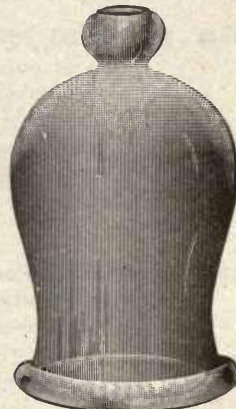
1558a



1558b



1562



1559

1556 BELL GLASSES, Glass stopper, ground in.

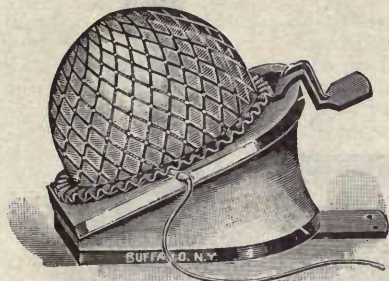
Height, inches	8	9	11	15
Dia., inches	4	5	6	7
Capacity	qt.	½	1	2 gal.
Each	\$1.00	1.45	1.75	2.25

1558 BELL GLASSES. With ground-in stopcock. Form a and b; from \$1.00 to \$2.50 extra.**1559 BELL GLASSES. Swelled form, with knob.**

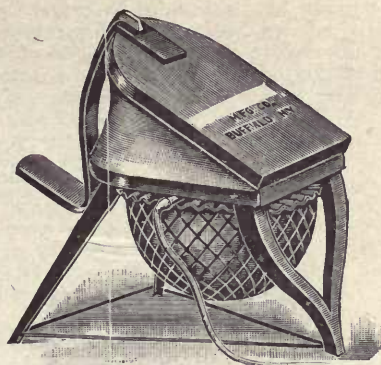
Capacity	pt.	qt.	½	1	2	3	5 gal.
Base Dia., inches	3	4	5	6	7	8½	10
Each	\$0.75	1.00	1.25	1.55	2.60	3.75	6.00

1562 BELL GLASSES. Open top, with tubulature on side.

Height inside	8½	11
Diameter inside	5½	7
Each	\$2.50	3.50



1570 to 1572



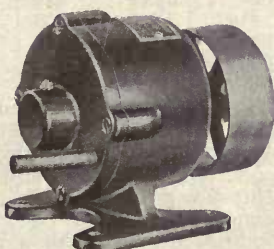
1574 to 1578

BLOWERS—Fletcher's Foot Blower, simple, compact, portable and powerful, giving a steady blast of air. The step is low and is convenient for the operator whether standing or sitting. A rubber disk forms the air reservoir and equalizes the air pressure.

1570	BLOWER.	No. 9, diam. of reservoir, $7\frac{1}{4}$ inches.....	\$ 6.50
1571	BLOWER.	No. 9a, diam. of reservoir, 9 inches.....	8.50
1572	BLOWER.	No. 9b, diam. of reservoir, 11 inches.....	13.00
Same, mounted on legs, making the reservoir less liable to injury.			
1574	BLOWER.	No. 10, diam. of reservoir, $7\frac{1}{4}$ inches.....	7.50
1576	BLOWER.	No. 10a, diam. of reservoir, 9 inches.....	9.50
1578	BLOWER.	No. 10b, diam. of reservoir, 10 inches.....	15.00
1580	BLOWER.	Extra rubber disk for Nos. 9 or 10.....	.75
1582	BLOWER.	Extra rubber disk for Nos. 9a or 10a.....	1.25
1584	BLOWER.	Extra rubber disk for 9b or 10b.....	1.75
1586	BLOWER.	Extra net for Nos. 9 or 10.....	.50
1586(a)	BLOWER.	Extra net for Nos. 9a or 10a.....	.50
1586(b)	BLOWER.	Extra net for Nos. 9b or 10b.....	.75



1588

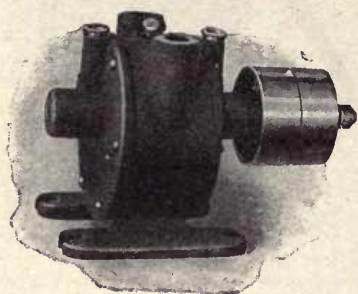


1589

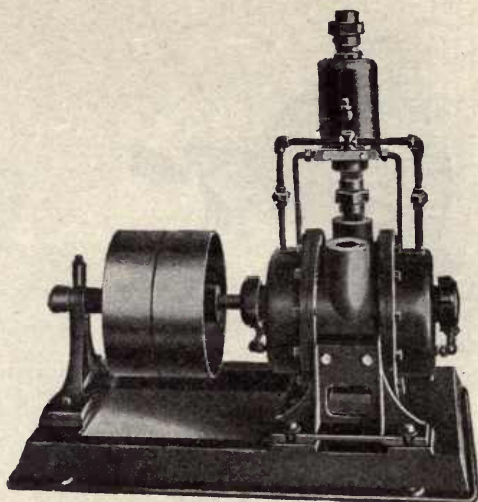


1590

- 1588 **BLOWER, Hand.** Composed of two pure gum rubber bulbs, one covered with net, for continuous blast.....\$1.50
- 1589 **BLOWER. Rotary Compressor.** A very small and convenient device for furnishing air pressure, operated by electric or other motor, requiring very little driving power. Made in three sizes. The small size will furnish sufficient air pressure for two or three Blast Burners and develops at 1,000 R. P. M. about 10 lbs. pressure per square inch. The larger sizes give a greater volume of air and may be used in operating gas heated crucible furnaces, etc. Size No. 1 requires $\frac{1}{8}$ H. P., and sizes No. 2 and 3 require $\frac{1}{4}$ H. P. motor.
- | | | | |
|----------------------|--------|-------|-------|
| Size No. | 1 | 2 | 3 |
| Height, inches | 3 | 4 | 5 |
| Each | | | |
| Net | \$7.50 | 12.50 | 15.00 |
- 1590 **BLOWER. Prof. Richard's water blast,** direct connection is made with Prof. Richard's filter pump No. 3690, producing simultaneously, vacuum and blast. With one filter pump.....\$9.00



1591



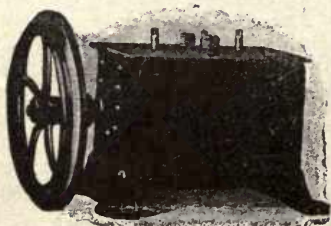
1593

1591 BLOWERS, Crowell's Positive Pressure Blower. Adapted to all purposes requiring air under pressure of from one to ten pounds per square inch, or for any degree of vacuum not exceeding twenty-four inches. The action is very simple but positive even at lowest speed. For well regulated delivery an air reservoir is recommended.

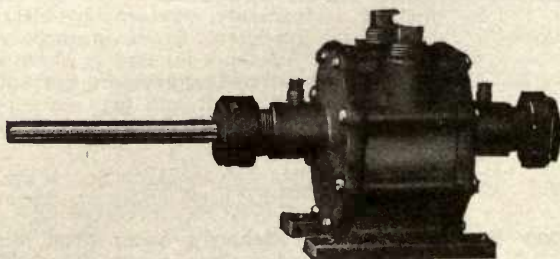
DETAILS OF CROWELL TYPE A BLOWERS

Size No.	Free Air Capacity		Revolutions per Minute Maximum Speed	Horse Power Approximate at 8 Pounds Pressure	Pulleys Inches	Net Weight Pounds	Pipe Size, Inlet and Outlet	Floor Space Inches	List Price Type A
	Cubic Feet per Rev.	Cubic Inches per Minute at Maximum Speed							
1-A	20	6.9	600	$\frac{1}{8}$	4x1	24	$\frac{1}{2}$ "	10 x 6 $\frac{1}{4}$	\$ 20.00
2-A	45	13.	500	$\frac{1}{4}$	4x1 $\frac{1}{2}$	34	$\frac{3}{4}$ "	12 $\frac{1}{2}$ x 6 $\frac{1}{2}$	26.00
3-A	125	25.3	350	$\frac{1}{2}$	6x2 $\frac{1}{2}$	90	1"	22 x 14	40.00
4-A	280	40.5	250	1	9x3	170	1 $\frac{1}{2}$ "	28 x 17	50.00
5-A	460	53.2	200	1 $\frac{1}{2}$	10x3	225	2"	34 x 20	75.00
6-A	690	79.8	200	2	12x4	320	2"	38 x 20	100.00
8-A	1050	121.5	200	3 $\frac{1}{2}$	14x6	575	2 $\frac{1}{2}$ "	48 x 22	150.00
10-A	1660	192.	200	5	18x6	770	3"	54 x 28	225.00
12-A	3390	392.3	200	7	20x6	1300	4"	60 x 31	390.00

1593 BLOWERS, Crowell's Rotary Compressor or Vacuum Pump, Type "D." The Crowell Type "D" Rotary Air Compressors are manufactured in nine standard sizes of from four to three hundred and ninety cubic feet free air per minute capacities and are designed for a working pressure of twenty-five pounds or less per square inch. When used as Vacuum Pumps, all sizes of this type will, under permissible atmospheric conditions, exhaust to a vacuum of from twenty-nine to thirty inches (mercury column). The action is simple, positive and durable with a continuous intake and delivery of the air. No valves, springs, gears or unbalanced parts are used or required in the construction. The pressure or degree of vacuum is not dependent upon high operating speeds and as no special foundation or great amount of floor space is required, the installation and opera-



With Oil Box



1594

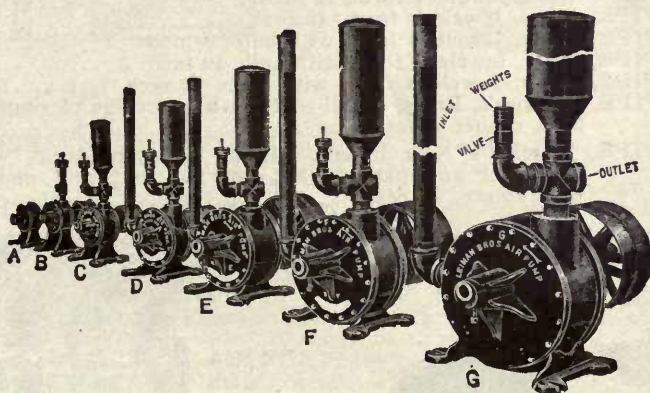
Without Oil Box

tion is a comparatively simple matter. The Crowell system of lubrication as applied to all standard Type "D" sizes, is positive and automatically controlled by the air pressure or vacuum. The oil feed valves are adjustable to suit the grade of lubricant used, and can be closed entirely when necessary. Rotates in one direction only either for use as a Compressor or a Vacuum Pump, requiring no changes in the lubricating system which operates from the outlet or pressure side under either compression or vacuum. Connections should be made to the inlet or suction side for vacuum work and it is also advisable, when using as a compressor, to run a pipe from the inlet to such place where a clean supply of air is assured. The heads are provided with water jackets for cooling, when necessary. The flow of water is regulated by the valve which is fitted to the overflow or discharge pipe. "Crowell Rotaries" are also made in other types, special sizes, etc., for lower pressures or vacuums as well as for higher pressures up to 125 lbs. to square inch, or practically absolute vacuums. Plain or automatically controlled motor driven outfits supplied in all types.

DETAILS OF CROWELL TYPE "D" COMPRESSORS OR VACUUM PUMPS

Size No.	Free Air Capacity		Maximum Speed Revolutions per Minute.	Approx. H. P. at 15 Pounds Pressure or 29 Inches Vacuum	Pulleys Tight and Loose Inches	Approximate Net Weight Pounds	Pipe Size Inlet and Outlet	Floor Space Inches	List Price Type
	Cubic Inches per Revolution	Cubic Feet per Minute at Maximum Speed							
1-D	15	4.3	500	$\frac{3}{4}$	6x2	70	$\frac{1}{2}$ "	13x18	\$ 65.00
2-D	40	9.2	400	1	8x2	115	$\frac{3}{4}$ "	14x22	80.00
3-D	100	17.	300	2	12x4	250	1 "	19x34	108.00
4-D	280	40.5	250	4	14x4	425	1 $\frac{1}{2}$ "	23x38	180.00
5-D	400	46.	200	5	18x6	580	2 "	26x44	204.00
6-D	600	69.4	200	6 $\frac{1}{2}$	18x8	725	2 "	26x55	270.00
8-D	1000	115.7	200	9	20x8	1150	2 $\frac{1}{2}$ "	30x64	390.00
10-D	1650	190.9	200	12	22x10	1675	3 "	36x70	600.00
12-D	3390	390.	200	20	24x10	2150	4 "	38x75	1000.00

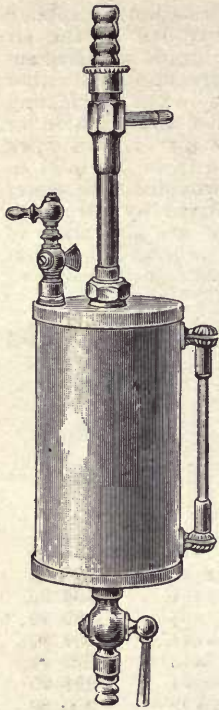
1594 BLOWER AND VACUUM PUMP, Crowell, No. O. D. Designed for intermittent operation and principally for vacuum work, but can also be used for pressure. It is fitted in an oil immersion box, making it practically leak-proof, and will exhaust to a vacuum of from 29 to 30 inches or a pressure up to 25 lbs. to sq. inch. Capacity about 2 cu. ft. of free air per minute. Inlet and outlet tapped for $\frac{1}{2}$ -inch pipe size, and about $\frac{1}{4}$ H. P. is required to operate it. Speed, 600 R. P. M. Can be used with or without the oil box. Weight with oil box 50 lbs. net; without oil box 20 lbs. Floor space (in box) is 15x8 inches.
 List price (with oil box)\$60.00
 List price (without box) 47.00



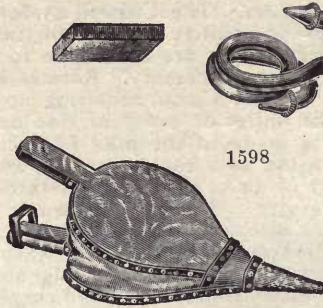
1595-1

1595-1 BLOWERS, High Pressure Rotary Positive.

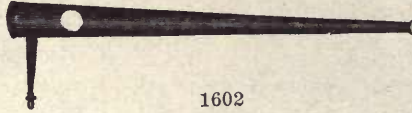
	AA	A	B	C	D	E	F	G
Size of pulley.....	2 $\frac{1}{4}$ x $\frac{3}{4}$	3x1	4x1 $\frac{1}{2}$	5x1 $\frac{3}{4}$	7x2 $\frac{1}{2}$	12x2 $\frac{1}{2}$	12x3 $\frac{1}{2}$	16x3 $\frac{1}{2}$
Cu. in. per rev. free air	11 $\frac{1}{2}$	17	30	80	200	400	675	1400
Cu. ft. per min. free air	4	6	10 $\frac{1}{2}$	18 $\frac{1}{2}$	35	58	78 $\frac{1}{2}$	162
R. P. M.....	600	600	600	400	300	250	200	200
Prices	\$20.00	24.00	34.00	45.00	67.00	82.00	120.00	195.00



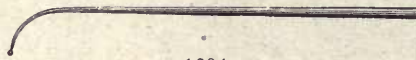
1595



1598



1602



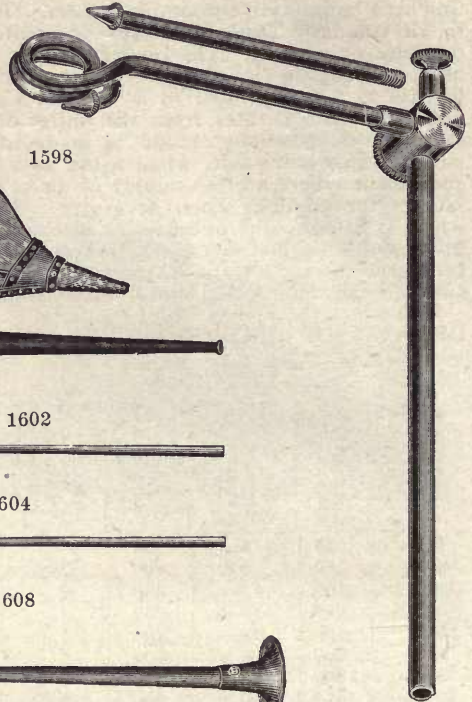
1604



1608



1612



1613

- 1595 BLOWERS**, Muencke's, latest pattern, complete, with pump, for exhausting and compressing air for blast lamps, etc., all fittings are nickel-plated, size of chamber is 4 by 8 inches.....**\$15.00**
- 1596 BLOWERS**, Same as above, but with vacuum gage attachment..... **22.50**
- 1598 BLOWERS**, Hand Bellows.
Diameter, inches 7 8 9
Each**\$1.50 \$2.00 \$2.50**
Anvil of best polished steel for blowpipe work, see No. 1042.
- 1602 BLOWPIPE**, Black's, conical form, japanned tin, with tip.....**\$0.50**
- 1604 BLOWPIPE**, Brass, Jeweler's form, 8 inch..... **.25**
- 1605 BLOWPIPE**, Brass, Jeweler's form, 10 inch..... **.35**
- 1606 BLOWPIPE**, Brass, Jeweler's form, 12 inch..... **.50**
- 1608 BLOWPIPE**, Brass, Jeweler's form with bulb, 8 inch..... **.35**
- 1609 BLOWPIPE**, Brass, Jeweler's form with bulb, 10 inch..... **.45**
- 1610 BLOWPIPE**, Brass, Jeweler's form with bulb, 12 inch..... **.60**
- 1612 BLOWPIPE**, Plattner's, Brass, nickel plated with movable platinum tip and hard rubber mouthpiece **3.50**
- 1613 BLOWPIPE**, Fletcher's New Patent, without blowpipe lamp, with both cold-blast and patent hot-blast, two jets and nickel-plated mouthpiece, in case **2.50**

WICK HOLDER TURNED
MALE, A REVOLUTION.

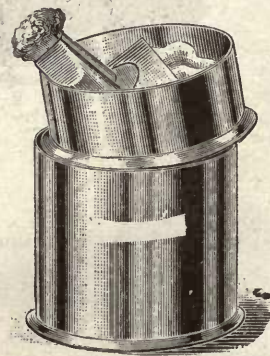


WICK HOLDER END VIEW
FULL SIZE SECTION



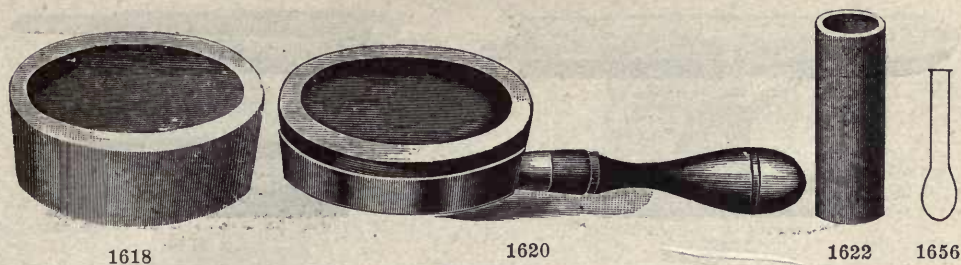
No. 1225.

1614

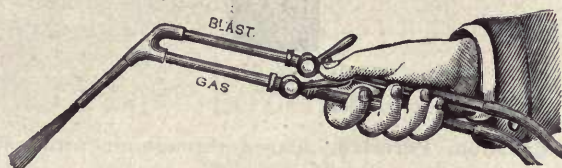


1615

- 1614 BLOWPIPE**, Lamp, polished brass.....**\$1.25**
- 1615 BLOWPIPE**, Lamp, tin, for tallow..... **.50**

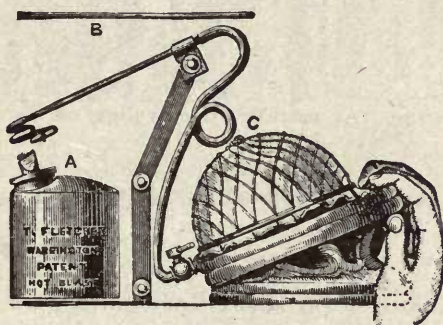


- 1616 BLOWPIPE Mouthpieces, hard rubber, trumpet shaped.....\$0.25
 1617 BLOWPIPE Tips, platinum, heavy, seamless.....At market price
 1618 BLOWPIPE Carbon Block, moulded, 4 inches diam......50
 1620 BLOWPIPE Carbon Blocks, with holder......75
 1622 BLOWPIPE Carbon Cylinders, moulded 3x1½......30
 1656 BLOWPIPE Matrasses, glass, bulbed, per doz......75

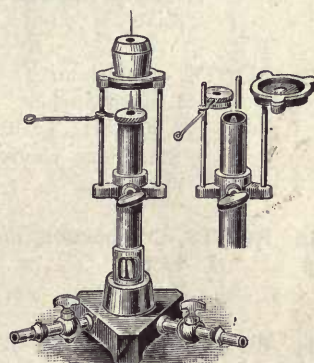


1680

- 1680 BLOWPIPE FOR BRAZING, Etc., with two lever stop-cocks.....\$3.50
 1682 BLOWPIPE, Larger Sizes, each.....\$4.50 to 6.00
 See also BURNERS, BLAST-LAMPS.



1687



1690

- 1687 BLOWPIPE, Fletcher's Special Chemical Blowpipe with folding stand, adjustable to any height or angle, complete with hand blower lamp, and two jets.....\$5.75
 1688 BLOWPIPE, Fletcher-Plattner No. 5C. Blowpipe Furnace, with Blast Bunsen and Fletcher Furnace Support.....5.25
 1690 BLOWPIPE, Fletcher-Plattner No. 5E. Blowpipe Furnace, with Blast Bunsen and Lewis Furnace Support.....5.75
 1692 BLOWPIPE, Fletcher-Plattner No. 5. Blast Bunsen, alone.....4.50
 1694 BLOWPIPE, Fletcher-Plattner No. 5D. Blowpipe Furnace, alone, with bottom or side hole, and one Crucible......35
 1696 FLETCHER FURNACE SUPPORT, alone75
 1698 LEWIS FURNACE SUPPORT, alone, including Cap.....1.25
 1700 CLAY CRUCIBLES, per doz.60
 1702 CLAY CAPSULES, per doz.60

BOOKS

We are prepared to supply all scientific books at publishers' prices.



1708



1710



1712



1714



1715

1708 BOATS, Combustion, Porcelain, glazed throughout with exception of outside bottom surface.

Size number.....	0	1	2	3	4	5	6	7	8
Length, mm.....	58	60	60	62	76	76	88	97	100
Width, mm.....	10	7	10	8	10	11	12	18	20
Height, mm.....	8	8	8	8	9	9	8	13	13
Each	\$0.22	.22	.22	.23	.24	.24	.25	.27	.28

1710 BOATS, of platinum.

Length, inches	1½	2	3	4
Appr. wt., grams.....	3.00	3.80	7.00	12.00
State size wanted when ordering. At market prices ruling on date of purchase.				

1712 BOATS, Combustion, nickel, used in iron and steel analysis, size 3 inches by ½ inch.

Each	\$1.00
------------	--------

1714 BOATS, Combustion, of Alundum, adapted to any kind of combustion work and largely used for the determination of carbon in iron and steel.

No. 5733. 3½ in. long, ½ in. wide, ⅝ in. high. Each, net.....	.30
No. 3729. 3¾ in. long, ⅝ in. wide, ¾ in. high. Each, net.....	.35
No. 5358. 5 in. long, ¾ in. wide, ⅞ in. high. Each, net.....	.40
No. 6016. 5½ in. long, ½ in. wide, ⅞ in. high. Each, net.....	.40
No. 7015. 4⅞ in. long, ⅞ in. wide, ⅞ in. high. Each, net.....	.50

It is recommended that R. R. Alundum be used in connection with above boats, thereby protecting the boats and permitting of the repeated use of both.

1715 R. R. ALUNDUM. A very pure crystalline Alumina, supplied in Nos. 46, 60, 90 and 120 mesh grain. Price, ½ lb., net, 50c; 1 lb., net..... .85

1716 BOATS, Combustion, Johnson's, of vitrified clay, as used by C. M. Johnson, for the determination of carbon in steel, ferro alloys and graphite. Five or more direct combustions of steel can be made with each boat, 120x15 mm. Each, \$0.25. Per dozen..... 2.50

1717 BOATS, Combustion, Fused Silica Ware, glazed all over, without handles.

Length, mm.....	44	76	76	102	152
Width, mm.....	13	13	16	16	12
Each	\$0.50	.75	.90	1.15	1.50



1718



1719

1718 BOILERS, Agateware Double, with retinned cover which fits both vessels.

Capacity of inside boiler, quarts.....	1	2	4
Each	\$1.25	1.50	2.75

1719 BOILERS, Agateware, with water bath.

Capacity of inside vessel, pints.....	2	4	8	12
Each	\$1.25	1.50	2.00	2.50

BOTTLES



1720

1724

1728

1730

1734

1736

1738

1740

1720 BOTTLES, Round, Narrow Mouth, for corks, Flint Glass.

Capacity, ounces	$\frac{1}{2}$	1	2	4	6	8	12	16	32
Per dozen	\$0.25	.35	.45	.60	.75	.85	.95	1.05	1.80

1722 BOTTLES, Round, Narrow Mouth, for corks, green glass.

Capacity, gallons	$\frac{1}{2}$	1	2	3
Each	\$0.20	.30	.70	1.00

1724 BOTTLES, Round Wide Mouth, flint glass.

Capacity, ounces	$\frac{1}{2}$	1	2	4	6	8	12	16	32
Per dozen	\$0.25	.35	.45	.60	.75	.85	.95	1.05	1.80

1726 BOTTLES, Round, Wide Mouth, green glass.

Capacity, gallons	$\frac{1}{2}$	1	2	5
Each	\$0.35	.50	1.00	1.50

1728 BOTTLES, Round, Wide Mouth, "Quinine" Bottles, flint glass.

Capacity, ounces	2	3	5
Per dozen	\$0.40	.50	1.00

1730 BOTTLES, Tinctures, Narrow Mouth, with "Mushroom" glass stopper, flint glass.

Capacity, oz.....	1	2	4	8	16	32	$\frac{1}{2}$ gal.	1	2	3
Per dozen	\$1.20	1.30	1.50	1.90	3.00	3.75	8.75	13.75	30.00	45.00

1734 BOTTLES, Salt Mouth, Wide Mouth, with "Mushroom" glass stopper, flint glass.

Capacity, oz.....	1	2	4	8	16	32	$\frac{1}{2}$ gal.	1	2	3
Per dozen	\$1.30	1.45	1.65	2.10	3.30	4.15	9.75	15.00	33.00	50.00

1736 BOTTLES, Salt Mouth, flint glass, flat stoppered.

Capacity, ounces	$\frac{1}{2}$	1	2	4	8	16	32
Per dozen	\$1.40	1.45	1.75	2.25	2.75	3.75	4.50

1738 BOTTLES , Tinctures, narrow mouth, flint glass, Reagent Bottle Stoppers.							
Capacity, ounces	$\frac{1}{2}$	1	2	4	8	16	32
Per dozen	\$1.20	1.20	1.70	2.00	2.50	3.50	4.50
1740 BOTTLES , Tinctures, narrow mouth, flint glass, flat glass stoppers.							
Capacity, ounces	1	2	4	8	16	32	
Per dozen	\$1.45	1.70	2.00	2.50	3.50	4.80	
1742 BOTTLES , Tinctures, of brown glass, mushroom stoppers.							
Capacity, ounces	1	2	4	8	16	32	
Per dozen	\$1.45	1.70	2.00	2.50	3.50	4.80	
1744 BOTTLES , Salt Mouth, brown glass, mushroom stoppered.							
Capacity, ounces	1	2	4	8	16	32	
Per dozen	\$1.60	1.90	2.25	2.75	3.85	5.50	



1750

REAGENT BOTTLES

With Ground Glass Labels.

The labels are raised letters blown in the glass, the surface of each letter being ground to render it distinct. The lettering is indestructible, and is not defaced when the bottle is washed.

The glass contains no lead, zinc or other metallic flux. The shape, thin dropping lip, and perfect stoppering are unequaled. The names and symbols are exactly as given in the list.

Included in our list of 4 oz. and 1 oz. Reagent Bottles will be found the names of all the Test Solutions referred to in the U. S. Pharmacopoeia.



1762

1750 One-fourth Pint Reagent Bottles, $\frac{1}{8}$ Liter. Height, $5\frac{1}{4}$ inches.

No.	No.
1. Hydrogen Sulphide (Amber)..... H_2S	20. Barium Chloride..... BaCl_2
2. Hydrochloric Acid..... HCl	21. Calcium Chloride..... CaCl_2
3. Acetic Acid..... $\text{HC}_2\text{H}_3\text{O}_2$	22. Calcium Sulphate..... CaSO_4
4. Sulphuric Acid..... H_2SO_4	23. Calcium Hydroxide..... $\text{Ca}(\text{OH})_2$
5. Nitric Acid..... HNO_3	24. Magnesium Sulphate..... MgSO_4
6. Potassium Ferrocyanide..... $\text{K}_4\text{Fe}(\text{CN})_6$	25. Mercuric Chloride..... HgCl_2
7. Potassium Sulphocyanide..... KCNS	26. Silver Nitrate (Amber)..... AgNO_3
8. Potassium Carbonate..... K_2CO_3	27. Lead Acetate..... $\text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2$
9. Potassium Sulphate..... K_2SO_4	28. Ferrous Sulphate..... FeSO_4
10. Potassium Iodide..... KI	29. Ferric Chloride..... Fe_2Cl_6
11. Potassium Ferricyanide..... $\text{K}_3\text{Fe}(\text{CN})_6$	30. Alcohol..... $\text{C}_2\text{H}_5\text{OH}$
12. Potassium Hydroxide..... KOH	31. Ammonium Sulphocyanide..... NH_4CNS
13. Potassium Dichromate..... $\text{K}_2\text{Cr}_2\text{O}_7$	32. Barium Hydroxide..... $\text{Ba}(\text{OH})_2$
14. Sodium Phosphate..... Na_2HPO_4	23. Barium Carbonate..... BaCO_3
15. Ammonium Hydroxide..... NH_4OH	35. Ether..... $(\text{C}_2\text{H}_5)_2\text{O}$
16. Ammonium Sulphide (Amber)..... $(\text{NH}_4)_2\text{S}$	36. Cupric Sulphate..... CuSO_4
17. Ammonium Chloride..... NH_4Cl	38, 39, 40, Blank.
18. Ammonium Carbonate..... $(\text{NH}_4)_2\text{CO}_3$	59. Sodium Carbonate..... Na_2CO_3
19. Ammonium Oxalate..... $(\text{NH}_4)_2\text{C}_2\text{O}_4$	51. Sodium Hydroxide..... NaOH

1750a The above 40 Bottles (3 blanks) are sold in a set. Price, \$7.50 per set, boxed.

1750b The above set filled with C. P. Reagents. Price, \$15.00 per set, net.

1750 (continued)

No.		No.	
37.	Platinic Chloride PtCl_4	97.	Ammonium Sulphydrate NH_4HS
58.	Fehling's Solution.	* 100.	Mercuric Potassium Iodide.
59.	Sodium Carbonate Na_2CO_3	401.	Barium Nitrate $\text{Ba}(\text{NO}_3)_2$
60.	Sodium Acetate $\text{NaC}_2\text{H}_3\text{O}_2$	404.	Silver Sulphate Ag_2SO_4
61.	Sodium Hydroxide NaOH	406.	Bromine Water.
77.	Ammonia NH_3	407.	Chloroform CHCl_3
81.	Stannous Chloride SnCl_2	408.	Cochineal.
82.	Ammonium Molybdate $(\text{NH}_4)_2\text{MoO}_4$	409.	Coraline.
83.	Carbon Disulphide CS_2	410.	Litmus.
86.	Mercurous Nitrate $\text{Hg}_2(\text{NO}_3)_2$	411.	Methyl-Orange.
87.	Indigo Solution.	412.	Phenolphthalein.
88.	Nessler's Solution.	413.	Turmeric.
90.	Magnesia Mixture.	414.	Iodine Solution $\text{I} + \text{KI}$
93.	Oxalic Acid $\text{H}_2\text{C}_2\text{O}_4$	415.	Methyl Alcohol CH_3OH
94.	Picric Acid $\text{C}_6\text{H}_3\text{OH}(\text{NO}_2)_3$	416.	Sodium Cobaltic Nitrite.
96.	Potassium Chromate K_2CrO_4	417.	Sodium Hyposulphite $\text{Na}_2\text{S}_2\text{O}_3$
Per dozen		\$1.75	

1752

Half Pint Reagent Bottles, $\frac{1}{4}$ Liter. Height, $6\frac{1}{2}$ inches.

No.		No.	
101.	Sulphuric Acid, Con. H_2SO_4	114.	Barium Chloride BaCl_2
102.	Sulphuric Acid, Dil. H_2SO_4	116.	Blank.
103.	Nitric Acid, Con. HNO_3	122.	Ammonium Sulphide (Amber). $(\text{NH}_4)_2\text{S}$
104.	Nitric Acid, Dil. HNO_3	126.	Alcohol $\text{S}_2\text{H}_5\text{OH}$
105.	Hydrochloric Acid, Con. HCl	129.	Sodium Phosphate Na_2HPO_4
106.	Hydrochloric Acid, Dil. HCl	130.	Ammonium Oxalate $(\text{NH}_4)_2\text{C}_2\text{O}_4$
107.	Hydrogen Sulphide (Amber). H_2S	131.	Acetic Acid $\text{HC}_2\text{H}_3\text{O}_2$
108.	Ammonium Hydroxide. NH_4OH	145.	Silver Nitrate (Amber). AgNO_3
109.	Ammonium Chloride NH_4Cl	150.	Potassium Hydroxide KOH
110.	Ammonium Carbonate $(\text{NH}_4)_2\text{CO}_3$	151.	Calcium Hydroxide $\text{Ca}(\text{OH})_2$
111.	Sodium Hydroxide NaOH	152.	Lead Acetate $\text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2$
112.	Sodium Carbonate Na_2CO_3		
Per dozen		\$2.25	

1754

Pint Reagent Bottles, $\frac{1}{2}$ Liter. Height, $7\frac{3}{4}$ inches.

No.		No.	
237.	Acetic Acid $\text{HC}_2\text{H}_3\text{O}_2$	222.	Hydrochloric Acid, Con. HCl
235.	Ammonium Carbonate $(\text{NH}_4)_2\text{CO}_3$	231.	Hydrochloric Acid, Dil. HCl
234.	Ammonium Chloride NH_4Cl	226.	Hydrodisodic Phosphate Na_2HPO_4
204.	Ammonium Hydroxide NH_4OH	216.	Nitric Acid HNO_3
227.	Ammonium Hydroxide, Dil. $\text{NH}_4\text{OH} + \text{Aq}$	219.	Nitric Acid, Con. HNO_3
229.	Ammonium Sulphide, Dil. $(\text{NH}_4)_2\text{S} + \text{Aq}$	232.	Nitric Acid, Dil. HNO_3
236.	Ammonium Sulphide (Amber). $(\text{NH}_4)_2\text{S}$	235.	Potassium Chromate K_2CrO_4
218.	Barium Chloride BaCl_2	221.	Potassium Hydroxide KOH
223.	Calcium Hydroxide $\text{Ca}(\text{OH})_2$	233.	Sodium Hydroxide NaOH
225.	Calcium Sulphate CaSO_4	228.	Sodium Hydroxide, Dil. $\text{NaOH} + \text{Aq}$
230.	Ether $(\text{C}_2\text{H}_5)_2\text{O}$	215.	Sulphuric Acid H_2SO_4
224.	Ferrous Sulphate FeSO_4	220.	Sulphuric Acid, Con. H_2SO_4
217.	Hydrochloric Acid HCl	211.	Blank.
Per dozen			

1756

Quart Reagent Bottles, 1 Liter. Height, $9\frac{1}{2}$ inches

No.		No.	
501.	Sulphuric Acid, Con. H_2SO_4	505.	Hydrochloric Acid, Con. HCl
502.	Sulphuric Acid, Dil. H_2SO_4	506.	Hydrochloric Acid, Dil. HCl
503.	Nitric Acid, Con. HNO_3	511.	Blank.
504.	Nitric Acid, Dil. HNO_3		
Per dozen		\$4.00	

1758

1 Oz. Reagent Bottles. Height, $3\frac{5}{8}$ inches.

No.		No.	
325.	Silver Nitrate (Amber). AgNO_3	336.	Gold Chloride AuCl_3
326.	Cobaltous Nitrate $\text{Co}(\text{NO}_3)_2$	341.	Blank.
327.	Platinic Chloride PtCl_4		
Per dozen		\$1.25	

1760

1 Oz. Wide Mouth Reagent Bottles. Height, $3\frac{1}{8}$ inches.

No.		No.	
350.	Sodium Carbonate Na_2CO_3	367.	Potassium Chlorate KClO_3
351.	Borax $\text{Na}_2\text{B}_4\text{O}_7$	368.	Potassium Ferricyanide $\text{K}_3\text{Fe}(\text{CN})_6$
353.	Sodium Acetate $\text{NaC}_2\text{H}_3\text{O}_2$	369.	Sodium Bitartrate $\text{NaHC}_4\text{H}_4\text{O}_6$
354.	Potassium Nitrate KNO_3	370.	Sodium Nitrate NaNO_3
358.	Potassium Cyanide KCN	371.	Starch .
361.	Am. Sod. Phosphate. $\text{NaNH}_2\text{HPO}_4$	372.	Test Paper.

1760 (continued)

No.		No.	
364.	Copper Cu	373.	Zinc.
365.	Ferrous Sulphate FeSO_4	374.	Ammonium Phosphate..... $(\text{NH}_4)_2\text{HPO}_4$
366.	Ferrous Sulphide FeS	375.	Blank.
Per dozen .....		.....\$1.35	

1762 4 Oz. Wide Mouth Reagent Bottles. Height, $4\frac{7}{8}$ inches.

No.		No.	
301.	Sodium Carbonate Na_2CO_3	305.	Ferrous Sulphate FeSO_4
302.	Potassium Nitrate KNO_3	307.	Blank.
303.	Potassium Cyanide KCN	312.	Test Paper.
304.	Borax $\text{Na}_2\text{B}_4\text{O}_7$	313.	Sodium Ammonium Hydrogen Phosphate $\text{Na}(\text{NH}_4)\text{HPO}_4 + 4\text{H}_2\text{O}$
Per dozen .....		.....\$2.00	

1764 Any names not on the list can be engraved on the Bottles.
Extra, per dozen\$1.25

BOTTLES FOR SPECIAL PURPOSES

1766 Loose Glass Caps for covering the necks and lips of Reagent Bottles (see cut) can be furnished at \$1.25 per dozen, extra, to fit the $\frac{1}{4}$ pints, $\frac{1}{2}$ pints, pints or quarts. See No. 1872.



1766



1773



1774



1776

1770 BOTTLES, Acid or Coin Test, with ground in dropper.

Capacity, oz.	1	$1\frac{1}{2}$	$2\frac{1}{2}$
Price, each	\$0.40	.50	.60

1773 BOTTLES, Aspirator, of heavy glass, with tubulature at bottom drawn out for attaching rubber tubing.

Capacity, cc.	125	250	500	1000	2000	4000
Each	\$0.75	1.00	1.25	1.75	2.50	5.50

1774 BOTTLES, Aspirator, of best heavy glass, with tubulature at bottom and a large smooth mouth for cork stopper.

Capacity .....pt.	$\frac{1}{4}$	$\frac{1}{2}$	1	2	gal $\frac{1}{2}$	1	2	3	5
Each	\$0.75	1.00	1.25	1.75	2.00	3.25	6.00	9.00	15.00

1776 BOTTLES, Aspirator, with glass stop-cock ground in the outlet.

Capacity, gallon	$\frac{1}{2}$	1	2
Each	\$6.00	8.00	12.00



1778 (a)



1783



1784



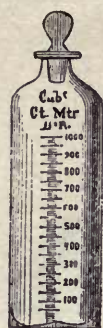
1786



1787



1788-1790



1792



1794



1796



1800

- 1778a BOTTLES, Balsam, for microscopical work, with ground glass cap and glass rod, $1\frac{1}{2}$ ounce, each\$0.35
- 1783 BOTTLES, Dropping, TK patent, with stopper arranged to deliver contents drop by drop or hermetically seal the bottle.. $\frac{1}{2}$, \$0.25; 1, .35; 2 oz..... .50
- 1784 BOTTLES, Dropping, ground in pipettes with rubber bulb, $\frac{1}{2}$ or 1 oz..... .50
- 1786 BOTTLES, Dropping, grooved stopper, $\frac{1}{2}$, 1 or 2 oz..... .50
- 1787 BOTTLES, Dropping, square, with Barnes' rubber pipette stopper, capacity 1 ounce..... .20
- 1788 BOTTLES, Dropping, Schuster's, each..... .30
- 1790 BOTTLES, Dropping, Schuster's, with stopper, each..... .50
- 1792 BOTTLES, Graduated, with glass stopper, for mixing.
Capacity, c.c. 250 500 1000
Each\$3.00 5.00 6.00
- 1794 BOTTLES, Homeopathic Vials, long or short.
Capacity drams $\frac{1}{8}$ $\frac{1}{4}$ $\frac{1}{2}$ 1 2 3 4 6 8
Per gross.....\$1.25 1.25 1.25 1.50 1.75 2.25 3.25 4.50 5.50
- 1796 BOTTLES, Oil Sample, long form.
Capacity, ounces 1 2 4 8
Per dozen\$0.75 1.10 1.50 2.25
- 1797 BOTTLES, Oil Sample, long form, as above, but with polished bottom, capacity 4 ounces, per dozen\$2.50
- 1800 BOTTLES, Round, Screw Neck Tube Vials, flint glass, with nickel-plated caps.
Capacity, drachms 1 2 3 4
Per dozen\$0.40 .50 .75 1.00



1804



1806

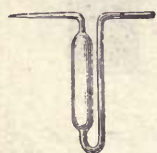


1810



1812

- 1802 BOTTLES, Round, Screw Neck Tube Vials, flint glass, with nickel-plated caps.
Per dozen..... $\frac{7}{8}$ x $3\frac{1}{2}$ in. $\frac{7}{8}$ x $5\frac{1}{2}$ in.
.....\$1.00 1.25
- 1804 BOTTLES, Specific Gravity, unadjusted, perforated stopper.
Capacity, c.c. 10 25 50 100
Each\$0.50 .60 .80 1.25
- 1806 BOTTLES, Specific Gravity, accurately adjusted, perforated stopper
Capacity, c.c. 10 25 50 100
Each\$1.00 1.50 2.00 2.50
- 1810 BOTTLES, Specific Gravity, very light, with ground-in thermometer.
Capacity, c.c. 10 25 50 100
Each\$3.50 4.50 5.50 7.50



1816



1818



1819



1821



1822



1823

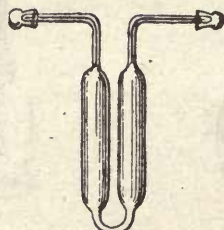
- 1812 BOTTLES, Specific Gravity, new style, with thermometer ground in central neck and a capillary stopper ground in side neck.
Capacity, c.c. 10 25 50 100
Each \$4.00 5.00 6.25 7.50
- 1816 BOTTLES, Specific Gravity, Ostwald's Sprengel, each \$1.00
- 1818 BOTTLES, Specific Gravity, Regnault's, with narrow mouth for liquids.
Capacity, c.c. 25 50
Each \$1.00 1.25
- 1819 BOTTLES, Specific Gravity, Boot's, double wall with vacuum, with perforated stopper and cap. Especially useful in taking the specific gravity of liquids which are easily affected by temperature.
Capacity, c.c. 25 50 100
Each \$5.00 6.00 7.50
- 1821 BOTTLES, Specific Gravity, Hubbard's, especially useful for semi-solid bitumens, dense oils, etc., consists of a fairly heavy straight tube with a ground in solid stopper, with a 1.6 mm opening through it instead of the usual capillary bore, capacity about 24cc, each \$1.50
- 1822 BOTTLES, Specific Gravity, Schumann's, for cement, each 5.00
- 1823 BOTTLES, Specific Gravity, LeChatelier's, for cement 5.00
- 1823(a) BOTTLES, Specific Gravity, LeChatelier's, as above, U. S. Bureau of Standards design 7.50



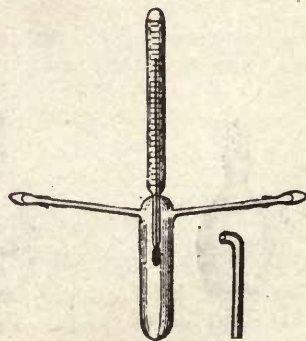
1824



1826



1827



1828

- 1824 BOTTLES, Specific Gravity, Hogarth's, for determining specific gravity of iron ores in iron analysis. See Blair's analysis, page 279 seventh edition \$3.00
- 1826 BOTTLES, Specific Gravity, Squibb's.
Capacity, c.c. 25 50 100
Each \$3.50 5.00 6.00
- 1827 BOTTLES, Specific Gravity, Sprengel's, with ground on suction tube \$1.50
- 1828 BOTTLES, Specific Gravity, Sprengel's, with normal thermometer and ground on suction tube 7.50



1829



1829(a)



1830



1830(a)



1831



1831(a)

1829 BOTTLES, Specific Gravity, Geissler's new style, with ground in thermometer, graduated in $\frac{1}{5}^{\circ}$ C and ground in capillary tube, with ground on cap.
 Capacity, c.c. 10 25 50 100
 Each \$4.00 5.00 6.25 7.50

1829(a) BOTTLES, Specific Gravity, Leach's style, with ground in thermometer, graduated in $\frac{1}{5}^{\circ}$ C, side tube with ground on cap with fine perforation.
 Capacity, c.c. 10 25 50
 Each \$6.00 6.50 7.50

1830 BOTTLES, Specific Gravity, Regnault's, for solids, with ground in neck and stopper.
 Capacity, c.c. 25 50
 Each \$1.25 1.50

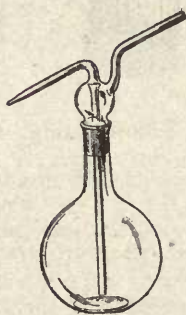
1830(a) BOTTLES, Specific Gravity, Regnault's, for liquids, with ground in stopper.
 Capacity, c.c. 25 50
 Each \$1.25 1.50

1831 BOTTLES, Specific Gravity, Walker's, for very fluid liquids, capacity about 20 c.c. \$3.50

1831(a) BOTTLES, Specific Gravity, American shape, for liquids or solids. 7.50



1832



1834



1836



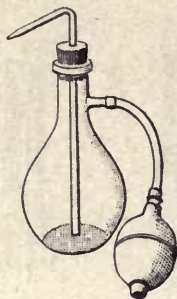
1838

1832 BOTTLES, Washing, fitted with rubber stopper and movable exit tube.
 Capacity, ounces 4 8 12 16 24 32 64
 Each \$0.50 .75 .90 1.00 1.25 1.50 2.00

1834 BOTTLES, Washing, with tubes ground in neck.
 Capacity, ounces 4 8 16 32
 Each \$1.70 2.25 2.75 3.50

1836 BOTTLES, Washing, with ground-in stopper, and with stopcock in each tube, for volatile liquids.
 Capacity, ounces 8 16 32
 Each \$3.50 4.00 5.00

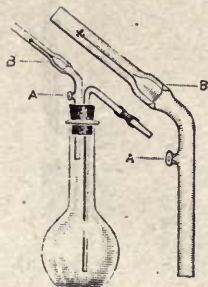
1838 BOTTLES, Washing, with safety mouthpiece to prevent saliva from entering.
 Capacity, ounces 8 16 32
 Each \$2.00 2.25 3.00



1840



1841

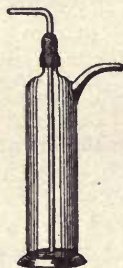


1841(a)

1840 BOTTLES, Washing, with rubber bulb and valve, giving a constant flow, each				\$1.50
1841 BOTTLES, Washing, for hot water, with wicker covered neck, fitted with rubber stopper and movable exit tube.				
Capacity, ounces	16	24	32	
Each	\$1.00	1.25	1.50	
1841(a) BOTTLES, Washing, most perfect wash bottle designed, fitted with Griffin's tube.				
Capacity, ounces	8	16	24	32
Each	\$1.00	1.25	1.50	2.00



1842



1844



1846



1847



1848

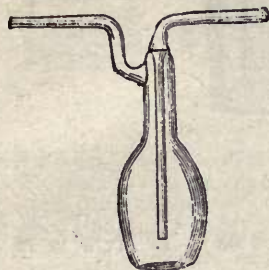


1849

1842 BOTTLES for Washing Gases, Allihn's, double acting.				
Capacity, c.c.	250	500		
Each	\$3.00	4.25		
1844 BOTTLES for Washing Gases, Bunsen's.				
Size, c.c.	125	250	500	
Each	\$0.75	1.00	1.25	
1846 BOTTLES for Washing Gases, Drexel's.				
Capacity, c.c.	125	250	500	
Each	\$1.50	2.00	2.50	
1847 BOTTLES for Washing Gases, Drexel's, as above, low form.				
Capacity, c.c.	125	250	500	
Each	\$1.50	2.00	2.50	
1848 BOTTLES for Washing Gases, Habermann's, with ground-in tube, capacity, about 250 c.c.				\$2.00
1849 BOTTLES for Washing Gases, Muencke's, with ground-in stopper, capacity, about 250 c.c.				\$2.75

GLASSBLOWING A SPECIALTY

We are in a position to supply special apparatus according to sketch. Repair work promptly done.



1849(a)



1849(b)



1849(c)

1849(a) BOTTLES, Gas Washing Bottles, Cloez's.

Capacity	ounces	8	16
Price	each	\$1.25	1.50

1849(b) BOTTLES, Gas Washing Bottle, Sillman's, with wide neck, fitted with rubber stopper.

Height, body, inches	7	8	10
Diameter, body, inches.....	1¾	2¼	2½
Each	\$1.00	1.25	1.50

1849(c) BOTTLES, Pressure, with porcelain stopper and rubber washer. Capacity, 12 ounces.

1850



1856



1857



1858



1859



1862

1850 BOTTLES, Weighing (Weighing Tubes), with flat bottom and ground-in stopper.

Height, mm	50	80	90	100	150
Diameter, mm	15	15	18	25	25
Each	\$0.40	.50	.60	.80	.90

1856 BOTTLES, Weighing, with ground-in stoppers, flat bottom, without neck.

Height, mm	40	50	50	60	70	60	80	115
Diameter, mm	25	30	40	30	35	50	40	42
Each	\$0.60	.70	.80	.90	1.00	1.25	1.00	1.50

1857 BOTTLES, Weighing, extra wide, with ground-in stoppers.

Height, mm	30	30	30
Diameter, mm	50	60	70
Each	\$1.50	2.00	3.00

1858 BOTTLES, Weighing, conical form, glass stoppered.

Capacity, about c.c.....	15	30	60
Each	\$0.60	.80	1.00

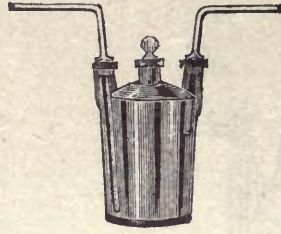
1859 BOTTLES, Weighing, extensively used for Coal Analysis, with cover ground airtight on outside of shell. Diameter of body 25 mm. Height of body 20 mm**\$0.50****1860 BOTTLES, Weighing, Grethen's, for weighing corrosive liquids, capacity 1½ to 2 c.c.....****3.00****1862 BOTTLES, Weighing, Lunge's, for weighing corrosive liquids.....****4.50**



1866



1868



1870

1866 BOTTLES, Woulff's, two necks.

Capacity, pints	$\frac{1}{4}$	$\frac{1}{2}$	1	2 gal.	$\frac{1}{2}$	1
Each	\$0.90	1.00	1.25	1.75	2.75	5.00

1868 BOTTLES, Woulff's, three necks.

Capacity, pints	$\frac{1}{4}$	$\frac{1}{2}$	1	2 gal.	$\frac{1}{2}$	1
Each	\$1.25	1.50	1.75	2.25	3.25	5.50

1870 BOTTLES, Woulff's, three necks, with delivery tubes and stopper ground in the necks.

Capacity, ounces	4	8	16	32
Each	\$3.00	3.50	4.00	5.50



a

1871a



b

1871b



1872

1871(a) BOTTLES, Woulff's, two neck and tubulature near bottom.

Capacity	1 pt.	1 qt.	$\frac{1}{2}$ gal.	1 gal.
Each	\$2.50	3.25	4.75	5.75

1871b(b) BOTTLES, Woulff's, with 3 necks, and tubulature near bottom.

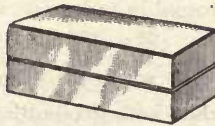
Capacity	1 pt.	1 qt.	$\frac{1}{2}$ gal.	1 gal.
Each	\$2.75	3.50	5.00	6.00

1872 BOTTLES, Caps, for keeping dust from necks of bottles.

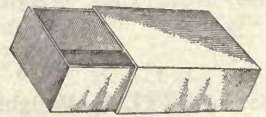
Size, inside, inches	$1\frac{3}{8} \times 2\frac{1}{8}$	$1\frac{1}{2} \times 2\frac{1}{4}$	$1\frac{7}{8} \times 2\frac{3}{4}$	$2 \times 2\frac{3}{4}$
Per dozen	\$1.00	1.00	1.00	1.00



1879



1880



1882

1879 BOTTLE REST, made of hard rubber.....\$0.50**1880 BOXES, Cardboard, oblong, covered with assorted tints glazed paper, $\frac{1}{4}$ gross in package.**

Size, inches	$2\frac{5}{8} \times 1\frac{1}{2} \times \frac{7}{8}$	$3\frac{1}{8} \times 2\frac{1}{8} \times 1\frac{1}{8}$
Per dozen	\$0.75	1.00

1882 BOXES, Cardboard, oblong, sliding, covered with fine glazed paper, assorted colors, $\frac{1}{4}$ gross in package.

Size, inches	$2\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{4}$	$3\frac{1}{8} \times 2\frac{1}{8} \times 1\frac{1}{8}$	$3\frac{5}{8} \times 2\frac{5}{8} \times 1\frac{1}{8}$
Per dozen	\$0.50	.75	1.00



1884

1886

1888

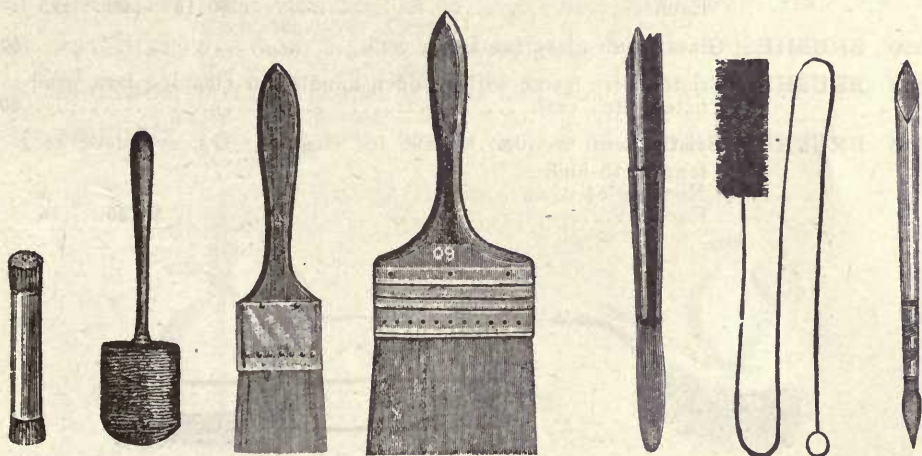
1890

1892

1884	BOXES, Glass, with nickel plated screw cap.						
	Capacity, ounces	$\frac{1}{2}$	1	2	4	8	
	Per dozen	\$0.75	1.00	1.25	2.00	3.00	
1886	BOXES, Glass, with glass cover.						
	Capacity, ounces	$\frac{1}{2}$	1	2	4		
	Per dozen	\$0.75	1.00	1.50	2.00		
1888	BOXES, Glass, Opal glass, oblong. Capacity, ounces, $\frac{3}{4}$, per dozen.....					\$2.00	
1888	BOXES, Tin, seamless, round.						
	Capacity, ounces	$\frac{1}{4}$	$\frac{1}{2}$	1	2	4	
	Per gross	\$1.50	2.00	3.00	4.00	5.00	
1892	BOXES, Wood, turned wood, $\frac{1}{4}$ gross in package.						
	Capacity, ounces	$\frac{1}{4}$	$\frac{1}{2}$	1	2	3	4
	Per gross	\$0.75	1.00	1.50	2.00	2.50	3.50

BRIQUETTE MOULDS, See Cement testing apparatus.

BRUSHES



1900

1902

1904

1906

1908

1910

1912

1900	BRUSHES, Assay, for lead buttons, Freiberg patterns, bristles firmly set.						
	Each						\$1.00
1902	BRUSHES, for Beakers, with wood handle, each.....						.25
1904	BRUSHES, Bristle, flat, for paste, etc.						
	Width, inches		1	$1\frac{1}{2}$	2		
	Each		\$0.20	.35	.50		
1906	BRUSHES, Bristle, flat, for buck board cleaning.						
	Width, inches		3	4	5		
	Each		\$0.50	.75	1.00		
1908	BRUSHES, Bristle, round, for marking, etc.						
	Width, inches		1	2	3		
	Each		\$0.25	.50	.75		
1910	BRUSHES, for Burettes and long tubes, each.....						\$0.25
1912	BRUSHES, Camel's Hair (Pencils).						
	Size		Small	Med.	Large		
	Per dozen		\$0.30	.40	.50		



1913



1914

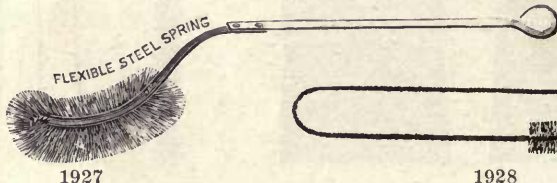


1924



1925

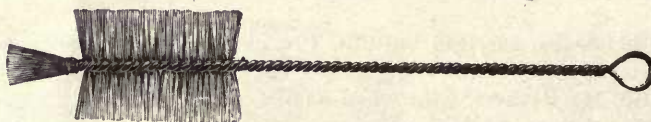
1913	BRUSHES, Camel Hair, extra large double quills, each.....	\$0.50			
1914	BRUSHES, Camel's Hair, flat, tin bound, wooden handle for scale pans, etc.				
	Width, inches	$\frac{1}{2}$	1	$1\frac{1}{2}$	2
	Each	\$0.25	.35	.45	.60
1916	BRUSHES, Camel's Hair, flat, hard rubber bound, wooden handle.				
	Width, inches		1	$1\frac{1}{2}$	2
	Each	\$0.50		.75	1.00
1918	BRUSHES, Camel's Hair, round, polished handles.				
	No.	1	2	3	4
	Each	\$0.15	.20	.25	.30
1920	BRUSHES, Glass, spun glass for acids, each.....	\$0.50			
1924	BRUSHES, Bristle, wire frame with wooden handle, for cleaning jars, graduates, etc., each	\$0.30			
1925	BRUSHES, Bristle, with wooden handle, for cleaning jars, cylinders, etc., length, 12 inches.				
	Number of rows		3	4	6
	Each	\$0.35		.45	.60



1927



1928



1927(a)

1927	BRUSHES, Bristle, for cleaning volumetric flasks, with pliable end, adapting itself to the curvature of flasks.				
	Size	1	2	3	
	For Flasks, c.c.....	250	500	1000	
	Each	\$0.30	.40	.50	
1927(a)	BRUSHES, Bristle, with wire handle for cleaning large tubes, cylinders, etc.				
	Length, inches	10	12	15	20
	Each	\$0.15	.20	.25	.30
1928	BRUSHES, for Narrow Tubes, long wire handle, length of bristle, 2 inches, per dozen	\$0.30			



1929



1930



1932



1935

- 1929 BRUSHES, Test tube, rattan handle with sponge attached, so called probangs. Each, 10c. Per dozen\$1.10
- 1930 BRUSHES, Test tube, bristles on tinned wire handle, with bristle end. Each, 8c. Per dozen..... .60
- 1931 BRUSHES, Test tube, bristles on brass wire handle, with bristle end. Each, 10c. Per dozen..... 1.10
- 1932 BRUSHES, Test tube, bristles, on tinned wire handle, with sponge end. Each, 8c. Per dozen75
- 1933 BRUSHES, Test tube, bristles on brass wire handle, with sponge end. Each, 10c. Per dozen..... 1.10
- 1935 BRUSHES, Test tube. On tinned iron wire; bristle. Each, 5c. Per dozen30

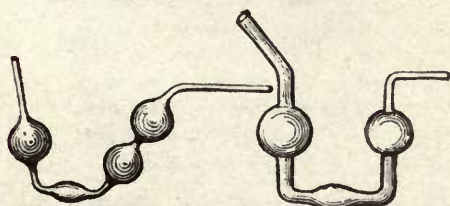


1950

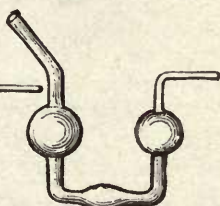


1952

- 1950 BULB, Chancel's, for finding specific gravity of gases.....\$7.50
- 1952 BULB, Glass, with tube at bottom for rubber tubing, to be used as a water or mercury reservoir.
- | | | | | |
|---------------------|--------|-----|------|------|
| Capacity, c.c. | 125 | 250 | 500 | 1000 |
| Each | \$0.50 | .60 | 1.00 | 1.50 |



1960



1962

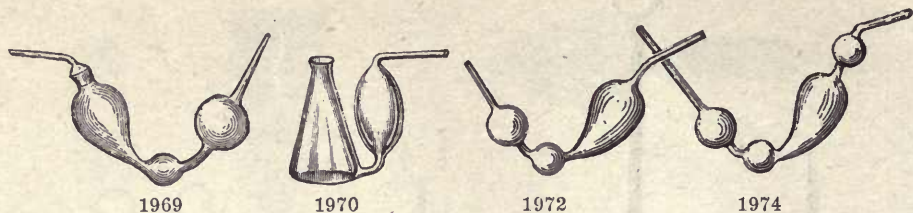


1964

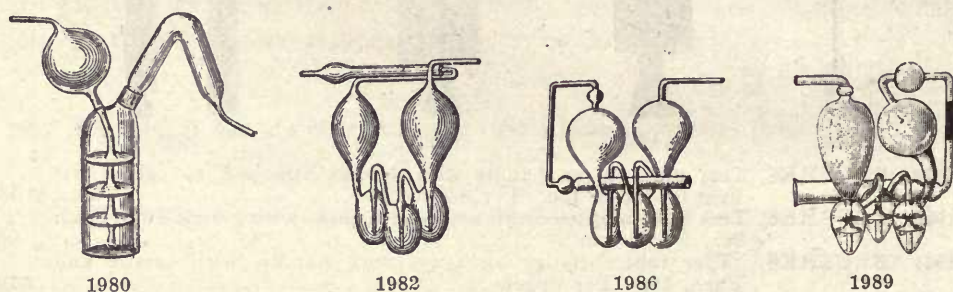


1966

- 1960 BULB, NITROGEN, Arndt & Kopp's, with 4 bulbs.....\$0.50
- 1962 BULB, NITROGEN, French pattern50
- 1964 BULB, NITROGEN, Fresenius', for direct titration..... .75
- 1966 BULB, NITROGEN, Haberman's 1.75

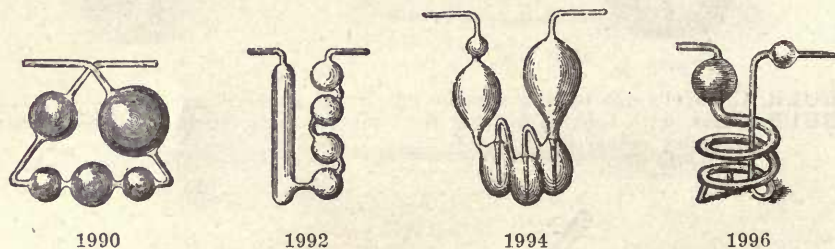


1968	BULB, NITROGEN, Shepherd's, with glass tube and cork.....	\$0.50
1969	BULB, NITROGEN, Shepherd's, with stopper ground in.....	1.25
1970	BULB, NITROGEN, Vollhard's .....	.50
1972	BULB, NITROGEN, Wills & Ventrapp's, with 3 bulbs.....	.50
1974	BULB, NITROGEN, Wills & Ventrapp's, with 4 bulbs.....	.50



BULB, POTASH, Bowen's (See No. 3238).

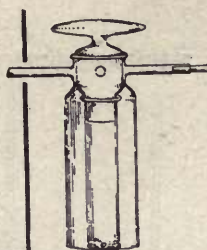
1980	BULB, POTASH, Delisle's, with ground in Ca Cl_2 tube, for many uses the shape of this apparatus will readily recommend itself. Complete, with aluminum foot.....	\$3.50
1982	BULB, POTASH, Geissler's, with Ca Cl_2 tube, cork joints.....	1.75
1986	BULB, POTASH, Geissler's, with Ca Cl_2 tube between the bulbs.....	1.75
1988	BULB, POTASH, Geissler's, with Ca Cl_2 tube between the bulbs and ground on	2.25
1989	BULB, POTASH, Wetzel's, a modification of the Geissler's with great absorbing power.....	2.50



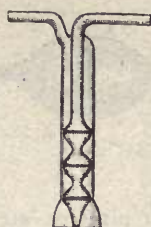
1990	BULB, POTASH, Liebig's	\$0.75
1992	BULB, POTASH, Mitcherlich's .....	.75
1994	BULB, POTASH, Mohr's	1.50
	BULB, POTASH, Winkler's, spiral form	
1996	BULB, POTASH, Small	1.25
1998	BULB, POTASH, Medium	1.75
2000	BULB, POTASH, Large	3.00



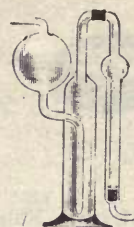
2001



2002

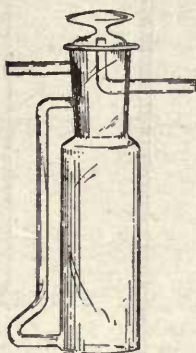


2003



2005

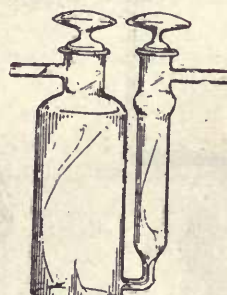
- 2001 BULB, Potash, Vanier's, with drying tube combined, used in combustion trains for CO_2 absorption. (Patented).....\$10.00
- 2002 BULB, Absorption, Fisher's, the lightest and most compact tube made.... 5.00
- 2003 BULB, Bowen's; the construction of this bulb is such as to insure a thorough absorption of the gas. Small..... 2.00
- 2004 BULB, Bowen's, large 2.50
- 2005 BULB, Potash, New, as designed by C. M. Johnson, for absorbing and weighing CO_2 2.00



2006



2007



2008

- 2006 BULB, Nesbitt, Carbon Combustion Bulb (designed by C. E. Nesbitt, Chief Chemist, Carnegie Steel Co., Edgar Thomson Works). For the rapid absorption of CO_2 by Soda Lime, in Carbon determinations in iron and steel. With this bulb the combustion can be run very fast, and safely completed in 6 minutes if so desired. The bulb is refilled in less than one-half of a minute. A slight turn of the stopper closes both inlet and outlet tubes so that bulb is sealed.
- To Fill.—Place layer of glass wool, $\frac{1}{4}$ inch thick in bottom; add about 60 grams of 12 mesh soda lime, 15% moisture; insert $\frac{1}{4}$ inch layer of asbestos fibre; add 10 grams of P_2O_5 ; then another thin layer of asbestos and a thin layer of glass wool, filling bulb to neck. Fill the hollow stopper with cotton. Bulb weighs about 135 grams filled. Using a 1.363 gram sample, 125 determinations of a .50 carbon steel can be made without refilling.....\$ 4.75
- 2007 BULB, Fleming, Carbon Combustion Bulb, for the rapid absorption of CO_2 by soda lime in carbon determinations in iron and steel. The upper bulb is filled with phosphoric anhydride, the lower bulb with soda lime 5.00
- 2008 BULB, Absorption, Wesson's 4.00



2010



2012



2014

2010 BULBS, Rubber, for pipettes, etc.

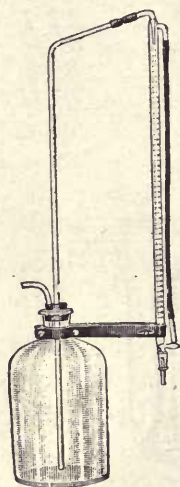
Capacity	2	5	25	50	100
Each	\$0.05	.10	.25	.35	.50

2012 BULBS, Rubber, with hard rubber valves for exhaust and pressure.

Capacity, 50 c.c., each.....	\$0.40
------------------------------	--------

2014 BULBS, Rubber, with double valve, for use with wash bottles for pressure.. .35

BULBS, Rubber, pair for constant blast. See Blowers, hand, No. 1588.



2030



2034



2038



2042



2040

2030 BURETTE, Automatic, Squibb's latest form, complete with clamp and reservoir. Capacity, 50 c.c., graduated to 1/10 c.c.....\$ 7.50**2034 BURETTE, Automatic, Knoefler's.**

Complete with reservoir, clamps, bulbs, etc., burette 50 c.c.,
1/10

10.00

2038 BURETTE, Brady's, a new design used by the Illinois Steel Co.

Capacity, 100 c.c., holding 50 c.c., in the bulb and graduated
from 50 c.c. to 100 c.c., 1/10 c.c. on tube below the bulb.....

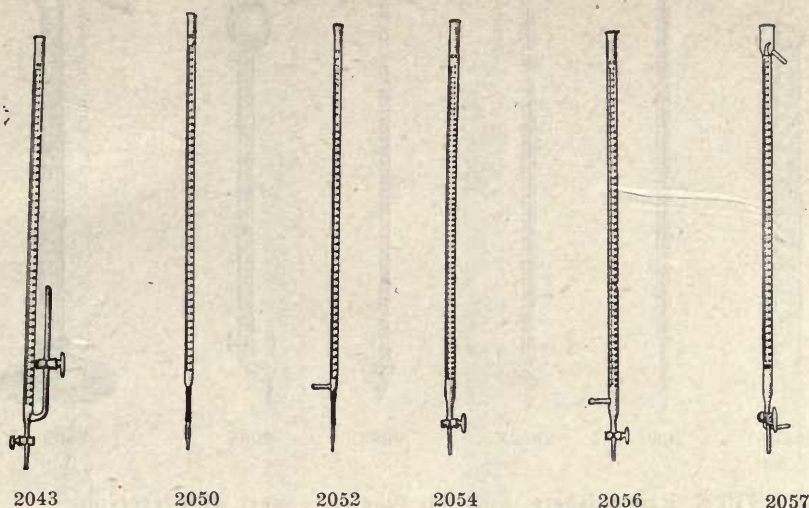
4.50

2040 BURETTE, Dispensing, for expensive liquids, with Geissler's stopcock.

Capacity, c.c.	100	250	500	1000	2000
Graduated to c.c.	1	5	10	25	50
Each	\$2.75	3.75	5.50	6.75	8.50

2042 BURETTE, Fresenius', with glass stopcock.

Capacity, c.c.	10	25	50	50	100	100
Graduated to c.c.....	1-10	1-10	1-5	1-10	1-5	1-10
Each	\$1.50	2.00	2.50	3.00	3.75	4.75



2043 BURETTE, Gawalowsky, with glass stopcock and glass side tube, with stopcock for filling from reservoir.

Capacity, c.c.	25	50	75	100
Graduated to c.c.	1-10	1-10	1-10	1-10
Each	\$4.50	5.25	6.00	7.25

2050 BURETTE, Mohr's, most accurately graduated, for pinchcocks, with tip and rubber connection.

Capacity, c.c.	10	25	50	50	75	100	100
Graduated to c.c.	1-10	1-10	1-10	1-5	1-10	1-10	1-5
Each	\$0.60	.90	1.75	1.50	2.00	2.75	2.50

2052 BURETTE, Mohr's, for pinchcocks, with side filling tube, and with tip and rubber connection.

Capacity, c.c.	10	25	50	50	75	100	100
Graduated to c.c.	1-10	1-10	1-10	1-5	1-10	1-10	1-5
Each	\$0.75	1.10	1.90	1.75	2.25	3.00	2.75

2054 BURETTE, Mohr's, with Geissler's glass stopcock.

Capacity, c.c.	10	25	50	50	75	100	100
Graduated to c.c.	1-10	1-10	1-10	1-5	1-10	1-10	1-5
Each	\$1.50	1.75	2.25	2.00	2.75	3.25	3.00

2056 BURETTE, Mohr's, with glass stopcock and side-filling tube.

Capacity, c.c.	10	25	50	50	75	100	100
Graduated to c.c.	1-10	1-10	1-10	1-5	1-10	1-10	1-5
Each	\$1.75	2.00	2.50	2.25	3.00	3.50	3.25

2057 BURETTE, Automatic, with zero point and overflow cup. With G. & F. three-way cock for discharging and filling from reservoir.

Capacity, c.c., graduated to 1/10 c.c.	25	50	100
Each	\$4.25	5.75	7.25

2057a BURETTE, Automatic, as above, but with tip for pinchcock instead of stopcock. Graduated in 1/10 c.c.

Capacity, c.c.	25	50	100
Each	\$2.75	4.25	5.75



2058



2060



2062



2068



2066



2069

2058 BURETTE, Rammelsberg, with side tube to connect with reservoir.

Capacity, c.c.	25	50	50	100
Graduated to c.c.	1-10	1-10	1-5	1-5
Each	\$2.50	3.00	3.00	3.75

2060 BURETTE, Schellbach, with dark enameled stripe on white enameled background, giving definite meniscus, with tip and rubber connections.

Capacity, c.c.	25	50	50	100	100
Graduated to c.c.	1-10	1-10	1-5	1-10	1-5
Each	\$1.50	1.75	1.75	3.00	2.50

2062 BURETTE, Schellbach, as above, with glass stopcock.

Capacity, c.c.	25	50	50	100	100
Graduated to c.c.	1-10	1-10	1-5	1-10	1-5
Each	\$2.50	3.00	3.00	4.50	4.25

2064 BURETTE, Schellbach's, as above, with Greiner & Friedrich's three-way stopcock.

Capacity, c.c.	25	50	75	100
Graduated to c.c.	1-10	1-10	1-10	1-10
Each	\$2.75	4.50	5.25	6.00

2066 BURETTE, Schiff's, with attached reservoir having a capacity of about 250 c.c.

Capacity of burette proper, 50 c.c. Graduated to 1/10 c.c.	
Each	\$8.50

2068 BURETTE, Greiner & Friedrich's, with three-way stop-cock and tube for filling from reservoir.

Capacity, c.c.	25	50	75	100
Graduated to c.c.	1-10	1-10	1-10	1-10
Each	\$2.75	3.75	4.25	4.75

2069 BURETTE, Bink's, English form, with support.

Capacity, c.c.	10	25	50	100
Graduated to c.c.	1-10	1-10	1-10	1-5
Each	\$1.50	2.00	2.50	3.25

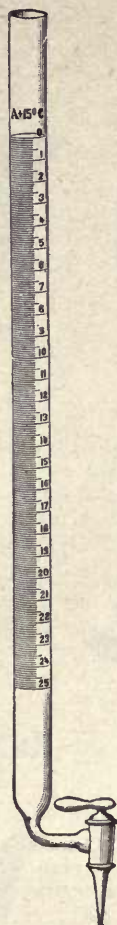
Burettes of Special design made to order—Send us your inquiries
—Estimates cheerfully given.



2071



2072



2073



2074

BURETTES FOR PRECISION WORK

These burettes have circular markings (all around) for very accurate reading; they are graduated with extreme care with distilled water at 15° C. by weighing on a delicate balance and are standardized to meet the requirements of the National Bureau of Standards, Washington. A certificate of accuracy can be supplied with each instrument, if desired, at a nominal cost.

2071 BURETTE, Mohr's, with tip and connection, for pinch cock. Graduated to meet the requirements of the U. S. Bureau of Standards.

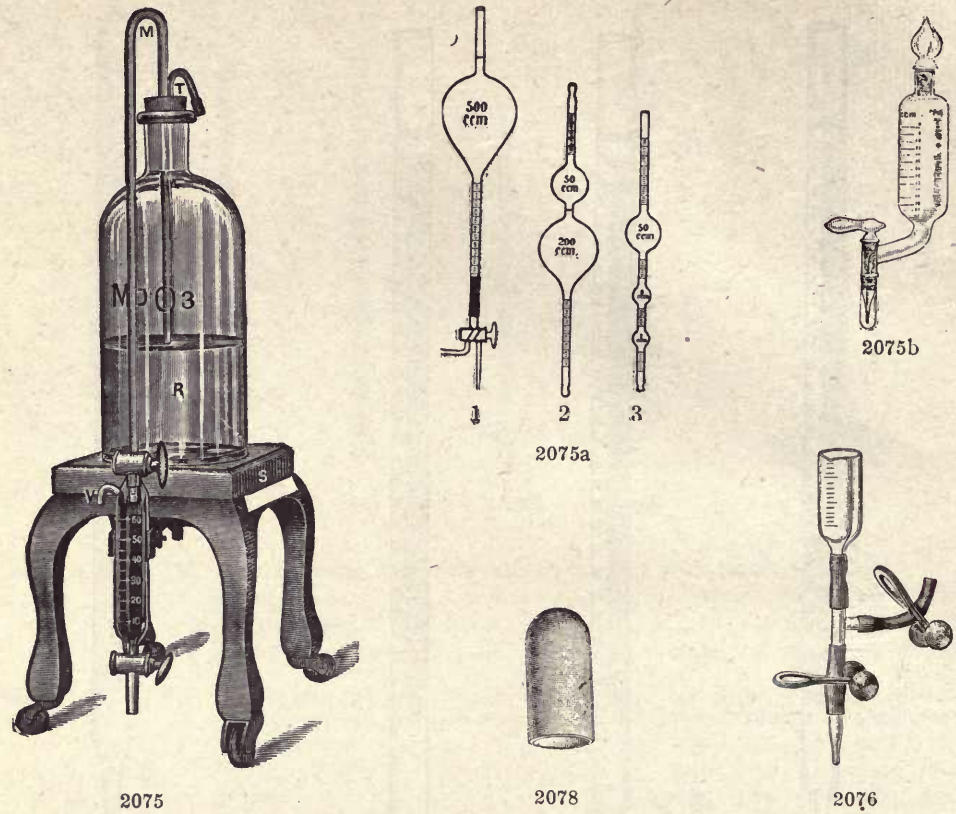
Capacity, c.c.	25	50	100
Graduated to c.c.	1-10	1-10	1-5
Each	\$5.00	6.50	7.50

2071a BURETTE, "Normal," Mohr's, with tip and connection, for pinch cock. Standardized by the National Bureau of Standards, Washington, D. C. with control stamp and certificate of corrections.

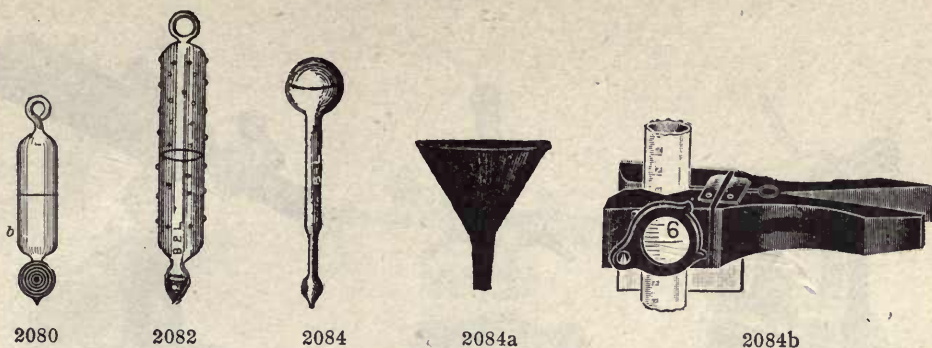
Capacity, c.c.	25	50	100
Graduated to c.c.	1-10	1-10	1-5
Each	\$8.50	10.00	12.50

2072 BURETTE, Geissler's, with straight stop-cock. Graduated to meet the requirements of the U. S. Bureau of Standards.

Capacity, c.c.	25	50	100
Graduated to c.c.	1-10	1-10	1-5
Each	\$6.00	7.50	9.00

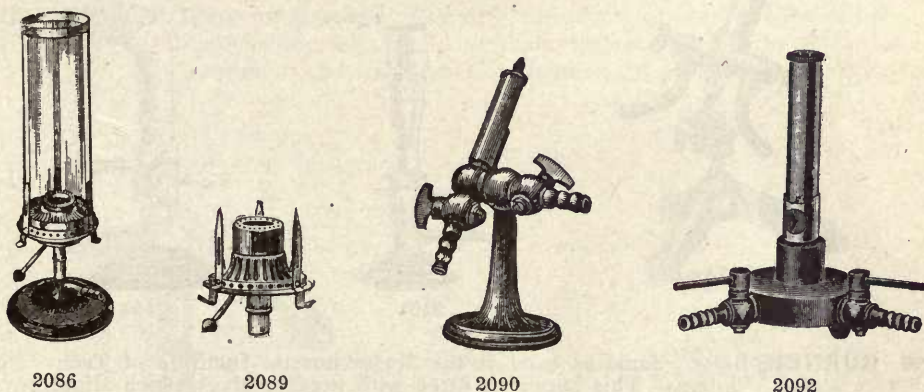


- 2072a BURETTE**, "Normal," Geissler's, with straight stop-cock. Standardized by the National Bureau of Standards, Washington, D. C., with control stamp and certificate of corrections.
- | | | | |
|-----------------------|---------------|--------------|--------------|
| Capacity, c.c. | 25 | 50 | 100 |
| Graduated to c.c..... | 1-10 | 1-10 | 1-5 |
| Price, each | \$9.50 | 11.25 | 13.50 |
- 2073 BURETTE**, Mohr's; with Geissler's stop-cock; Fresenius pattern. Graduated to meet the requirements of the U. S. Bureau of Standards.
- | | | | |
|-----------------------|---------------|-------------|-------------|
| Capacity, c.c. | 25 | 50 | 100 |
| Graduated to c.c..... | 1-10 | 1-10 | 1-5 |
| Price, each | \$5.00 | 6.50 | 7.50 |
- 2074 BURETTE**, with three-way stop-cock. Graduated to meet the requirements of the U. S. Bureau of Standards.
- | | | | |
|-----------------------|---------------|-------------|-------------|
| Capacity, c.c. | 25 | 50 | 100 |
| Graduated to c.c..... | 1-10 | 1-10 | 1-5 |
| Price, each | \$6.00 | 7.50 | 9.00 |
- 2075 BURETTE**. After design of Dr. Edward S. Johnson. For quick measuring of reagents. Complete with 60 c.c. burette, 4 liter bottle, stand, etc., including also rubber force pump and pinch-cock
- 2075a BURETTE**, Morse's Calibrating. For calibrating burettes, flasks, pipettes, etc. Complete set of three.....
- | | |
|--------------|-------------|
| Part 1 | 7.50 |
| Part 2 | 4.75 |
| Part 3 | 5.75 |
- 2075b BURETTE**, Weighing, Ripper's, graduated to 60 c.c. in 5 c.c. subdivisions..
- 2076 BURETTE Attachment**, for connecting the burette with reservoir, complete as per sketch
- 2078 BURETTE Caps**, to protect contents from dust, per doz.....

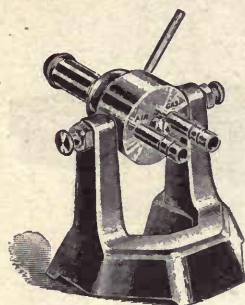


2080	BURETTE Float, Erdmann's	\$0.50
2082	BURETTE Float, with points, to prevent adhering to walls.....	.50
2084	BURETTE Float, Beutell's .....	.50
2084a	BURETTE Funnel, for filling burettes.....	.20
2084b	BURETTE Meniscus-Reader, improved with lens and reading line.....	1.50
2085	BURETTE Tips, per dozen .....	.25

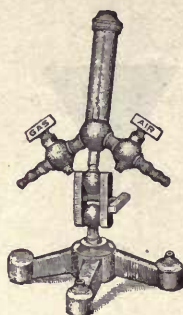
BURNERS



2085	BURNER, Argand, with mica chimney, used in iron and steel laboratories for keeping even temperature.....	\$1.50
2086a	Extra Mica Chimneys .....	.35
2087	BURNER, Argand, like No. 2086, but with Copper Chimney.....	1.10
2087a	Extra Copper Chimneys.....	.25
2088	BURNER, Argand, like No. 2086, but with glass chimney.....	1.25
2088a	Extra Glass Chimneys .....	.25
2089	BURNER, Argand, like No. 2086, but without chimney and base, for screwing into gas pipe .....	.75
2090	BLAST LAMPS, Bunsen's for gas	3.25
2092	BLAST LAMPS, Fletcher's, for gas; upright	4.00
	(Can also be used as Bunsen burner.)	



2094

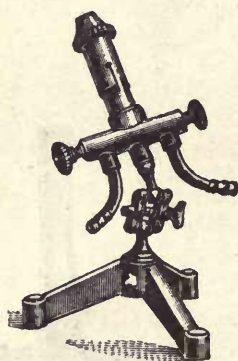


2096

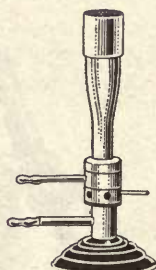


2097

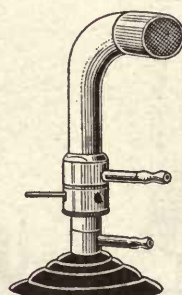
- 2094 BURNER, Fletcher's Compound; for glass workers and experimental laboratories\$10.00
- 2096 BURNER, Wiesnegg's, French form, mounted on ball joint..... 5.00
- 2097 BURNER BLAST LAMP, Bunsen, extra large size for gas, very powerful flame with set of two tips..... 9.00



2099



2101



2103

- 2099 BURNER, Blast. Same as used at the Massachusetts Institute of Technology. This burner is fitted with needle valves which afford accurate adjustment of the air and gas supply. A set of 3 gas tips of various sizes furnished with each burner.....\$ 5.00
- 2101 BURNER, Blast, Meker's. With short inlet tubes, for general work. With these burners you can get the highest temperature obtainable with a gas blast burner, requiring air pressure from 1 to 2 pounds per square inch. Size No. 2, height $5\frac{3}{8}$ inches..... 4.00
- 2101a BURNER, Blast, Meker's. Same as No. 2101, but larger. Size No. 4, height $7\frac{1}{2}$ inches 5.75
- 2101b BURNER, Blast, Meker's. Same style as No. 2101, but with long inlet tubes. To be used in furnaces, etc. Size No. 2, height $5\frac{3}{8}$ inches 5.20
- 2101c BURNER, Blast, Meker's. Same as No. 2101b, but larger. Size No. 4, height $7\frac{1}{2}$ inches 7.25
- 2103 BURNER, Blast, Meker's. Pipe shaped, horizontal. Diameter of flame, $1\frac{1}{4}$ inches. Height of burner, $6\frac{3}{8}$ inches..... 7.50
- 2103a BURNER, Blast, Meker's. Same as No. 2103, but larger. Diameter of flame, $1\frac{3}{4}$ inches. Height of burner, 8 inches..... 14.00



2105



2107

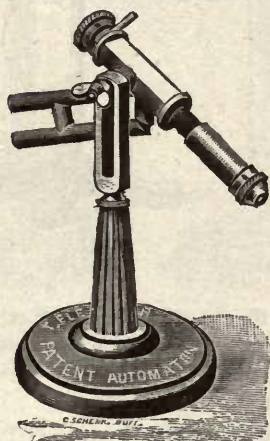


2109

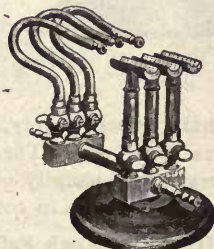
2105 BURNER, Blast, for Gasoline. Upright flame especially designed for Laboratories not having a gas supply; gives a clear blue flame, which is adjustable. The burner is swivelled and can be burned in any position. Provided with support stand for holding crucibles, evaporating dishes, etc. Absolutely safe. Capacity, 1 pint. Consumption, $\frac{1}{4}$ pint per hour. Price, each, net.....\$7.50

2107 BURNER, Blast, for Gasoline. Same as above, but smaller, and without swivelled burner. Capacity, $\frac{1}{2}$ pint. Consumption, $\frac{1}{4}$ pint per hour. Price, each net 5.25

2109 BURNER, Blast, for Gasoline. Can be used indoors or outdoors for soldering, melting, etc.; steel attachment included for holding soldering copper. Capacity, 1 qt. Consumption, $\frac{1}{2}$ pint per hour. Price, each, net 6.00



2111

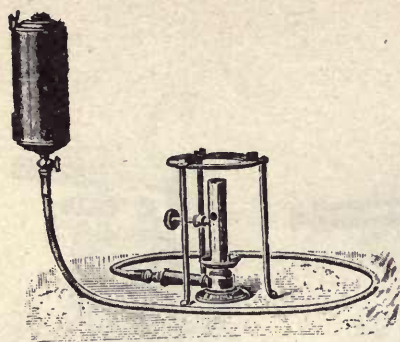


2113

2111 BURNER, Blast, or automatic hand blowpipe on stand. Blowpipe may be detached and used in the hand if desired.....\$ 7.50

2113 BURNER, Blast, Glass blowers fires, complete.

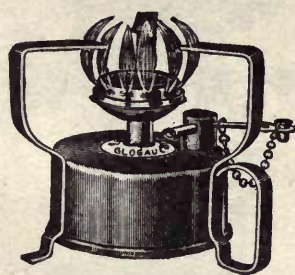
Set of 2-1 light burners, per set.....	7.50
Set of 2-2 light burners, per set.....	12.00
Set of 2-3 light burners, per set.....	15.00
Extra tips for above, each.....	.60



2114

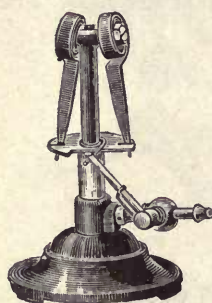


2114a

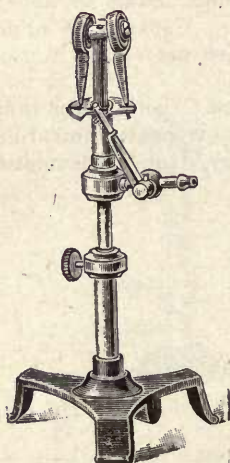


2114b

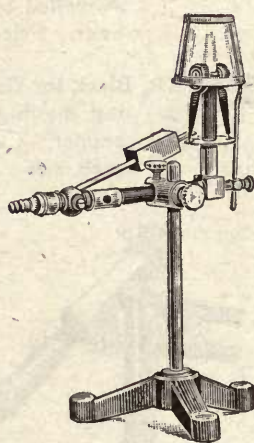
- 2114 BURNER, Alcohol, Bartel's.** Very powerful, no wick required. Five feet of flexible metallic tubing furnished to connect burner with reservoir\$8.50
- 2114a BURNER, Alcohol Blast.** Copper, upright blast..... 2.50
- 2114b BURNER, Alcohol.** Stove for heating. Made of brass, generates its own gas. Capacity, 7 oz..... 2.00



2115



2115b



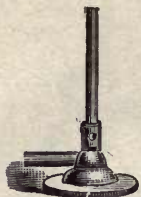
2115d

Burners, Koch Safety, with automatic stop-cock, to close off the gas when the flame has gone out. These burners are very useful in laboratories, especially for incubators, which usually need only a small flame to keep up the required temperature. They are very simple in construction and not liable to get out of order.

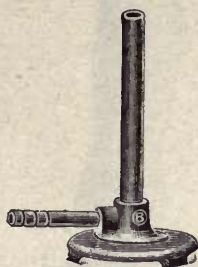
- 2115 BURNER, Koch Safety, small,** 5 inches high with $\frac{1}{8}$ -inch burner tube.....\$ 6.50
- 2115a BURNER, Koch Safety, large,** as above, 6 inches high with $\frac{1}{8}$ -inch burner tube. 7.50
- 2115b BURNER, Koch Safety, small,** 9 inches high, adjustable to 13 inches..... 9.50
- 2115c BURNER, Koch Safety, large,** as above, 10 inches high, adjustable to 14 inches 10.50
- 2115d BURNER, Koch Safety, large,** heavier pattern on adjustable stand, with a weight on stop-cock instead of the spring..... 12.00
- 2115e BURNER, Koch Safety,** same as above but with two burners..... 15.00



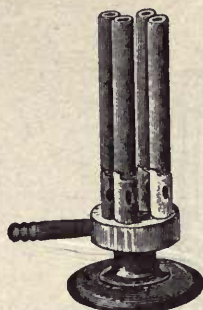
2115g



2116



2117

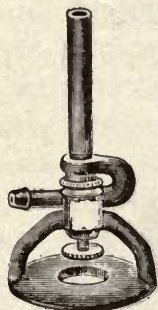


2122

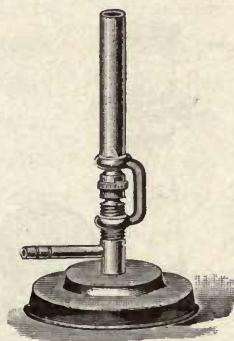


2126

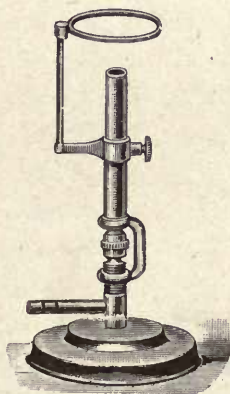
- 2115g BURNER, Bunsen's, Micro, 2-inch high, tube $\frac{1}{4}$ -inch.....\$0.50
- 2115h BURNER, Bunsen's, Micro, 3-inch high, tube $\frac{3}{8}$ -inch, nickel plated..... .60
- 2116 BURNER, Bunsen's, with air regulator..... .30
- 2117 BURNER, Bunsen's, central draught burner, open at bottom, avoiding danger of clogging gas orifice..... .30
- 2118 BURNER, Bunsen's, with 2 tubes, and air regulators..... 1.50
- 2120 BURNER, Bunsen's, with 3 tubes, and air regulators..... 2.00
- 2122 BURNER, Bunsen's, with 4 tubes, and air regulators..... 3.00
- 2124 BURNER, Bunsen's, with fork, to attach to support..... 1.50
- 2126 BURNER, Bunsen's, with stopcock 1.75



2127



2128

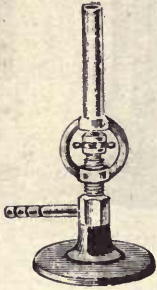


2130

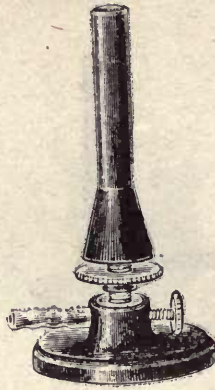


2131

- 2127 BURNER, Boyce's. for gasoline or coal gas with regulators for air and gas. Height, $5\frac{1}{2}$ inches.....\$1.50
- 2128 BURNER, Adjustable Bunsen, for burning gas of variable quality. The size of the orifice through which the gas escapes is adjusted by turning the milled cap-nut seen inside the arm which supports the upright tube. Its adjustability renders it a favorite burner for those using gasoline gas, or the mixture of gasoline vapor and air made by gas machines..... 1.50
- 2130 BURNER, Adjustable Bunsen, with attachment for triangles, dishes, etc., inside dia. 3 inches 2.25
- 2131 BURNER, Tirill's Form, for coal or gasoline gas. This burner is made entirely of brass, and is considered by some to be the best burner made 1.50



2131a



2133



2133b

- 2131a BURNER**, Bunsen, adjustable, improved form, for coal or gasoline gas. Height, $6\frac{1}{2}$ inches; diameter of tube $\frac{1}{2}$ inch.....\$1.25
- 2131b BURNER**, Bunsen, same as above, but with $\frac{1}{8}$ inch I. P. male thread instead of base. Height 6 inches..... 1.00
- 2133 BURNER**, Teclu's, small size, with air and gas regulator. Height 6 inches; diameter of tube $\frac{1}{2}$ inch..... 1.75
- 2133a BURNER**, Teclu's, large size, giving a large and powerful flame, with regulator for air and gas. Height, $7\frac{1}{2}$ inches; diameter of tube, $\frac{3}{4}$ inch 2.50
- 2133b BURNER**, with stop-cock and pilot light. The dotted lines show the small tube for pilot light, which is on the inside of the burner tube. Height, 6 inches; diameter of tube, $\frac{1}{2}$ inch..... 1.75



2133c



2134

- 2133c BURNER**, Boekel's, for burning gases of various qualities.

By turning the knurled part A, you can increase or lower the flame, the flow of gas and air being regulated automatically, and therefore the burner will always retain a blue flame.

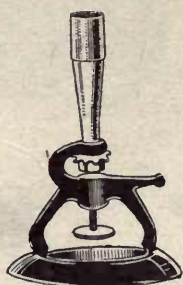
B is the set-screw by which to regulate the burner-tip C, supplying more or less air, according to the quality of gas. The supply of air is regulated by inserting the screw into the next slot, either to the right or to the left. This is the best self-adjusting Bunsen burner made, and we can recommend it to give entire satisfaction. Height, 6 inches; diameter of tube, $\frac{1}{2}$ inch 1.75

- 2134 BURNER**, Chaddock's, of porcelain; incorrodible; a new Bunsen Burner especially designed for use in hoods where metal, on account of the smoky flame, soon corrodes; also desirable for all laboratory purposes, no retort stand and wire gauze being required. Complete with support for dishes, chimney and three asbestos pads.. 2.50

MEKER BURNERS



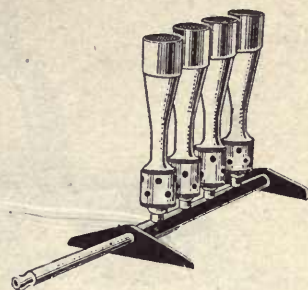
2135



2135p



2135r



2135t

These burners are very powerful, requiring reasonable gas pressure for economical operation. The temperature of flame is nearly uniform throughout as there is a homogeneous mass of burning gas. Size No. 1 is very useful in sealing. Sizes Nos. 2 and 3 are most useful for general laboratory work. Size No. 4 is very useful as an ordinary blast burner.

Size No.....	1	2	3	4	5
Diameter of Burner, mm.....	16	20	24	30	43
Height of Burner, mm.....	115	130	155	190	250

2135 BURNER, Meker. For coal gas. Size No. 1.....\$2.10

2135a BURNER, Meker. For coal gas. Size No. 2..... 2.30

2135b BURNER, Meker. For coal gas. Size No. 3..... 3.35

2135c BURNER, Meker. For coal gas. Size No. 4..... 3.75

2135d BURNER, Meker. For coal gas. Size No. 5..... 7.85

2135e BURNER, Meker. For gasoline gas. Size No. 1..... 2.65

2135d BURNER, Meker. For gasoline gas. Size No. 2..... 2.80

2135e BURNER, Meker. For gasoline gas. Size No. 3..... 4.00

2135f BURNER, Meker. For gasoline gas. Size No. 4..... 4.25

2135g BURNER, Meker. For gasoline gas. Size No. 5..... 8.60

2135h BURNER, Meker. For natural gas. Size No. 1..... 2.65

2135j BURNER, Meker. For natural gas. Size No. 2..... 2.80

2135k BURNER, Meker. For natural gas. Size No. 3..... 4.00

2135l BURNER, Meker. For natural gas. Size No. 4..... 4.25

2135m BURNER, Meker. For natural gas. Size No. 5..... 8.60

2135p BURNER, Celeritas. Improved Meker form. Adjustable, can be used for either coal, gasoline or natural gas. Size No. 2, diameter of burner top, 20 mm..... 2.20

2135r BURNER, Meker. Flat Flame. Top of burner, 15x50 mm. Height of burner, 225 mm. for coal gas..... 6.65

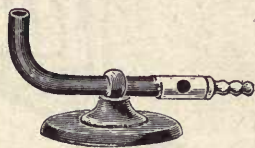
BURNER, Meker. Same as No. 2135r, but for gasoline gas..... 7.25

BURNER, Meker. Same as No. 2135r, but for natural gas..... 7.25

2135s BURNER, Meker. Four burners, size No. 3, mounted in a row on a gas supply pipe, for coal gas.....16.00

2135t BURNER, Meker. Same as No. 2135s, but for natural gas.....19.00
(These burners can be supplied with any number of any size burner desired.)

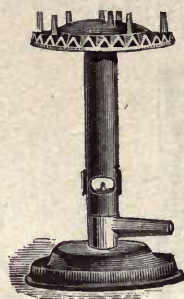
We can quote very attractive prices on Meker burners when required in large quantities. Write us for discount on wholesale requirements.



2136



2138



2140

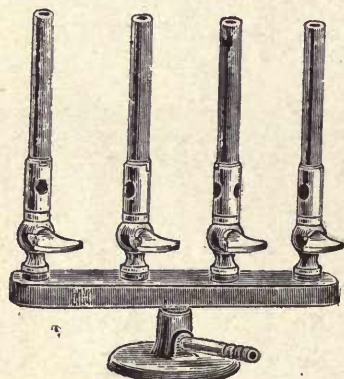
2136—BURNER, Bunsen's, low shape, with air regulator.....\$0.50

2138 BURNER, Fletcher's, with spider, for holding dishes, etc..... 1.25

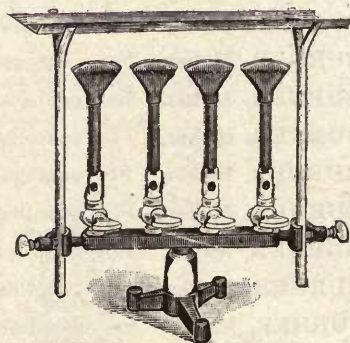
2140 BURNER, Fletcher's Star flame, crown top, with stand.

Size, inches 1½ 3 3½

Each\$1.00 1.25 1.50



2142

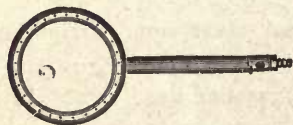


2145

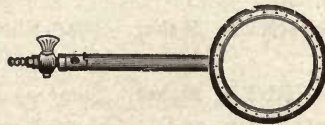
2142 BURNER, Bunsen's, 4 burners in one row for heating long tubes.....\$5.00

2144 BURNER, Bunsen's, as No. 2142, with stopcock for each burner..... 6.50

2145 BURNER, Bunsen, 4 tubes in line, each with stopcock and wing top, complete with adjustable support and trough for heating tubes..... 8.00



2146



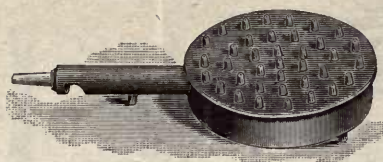
2147

2146 BURNER, Bunsen's Ring form, to be attached to any support.

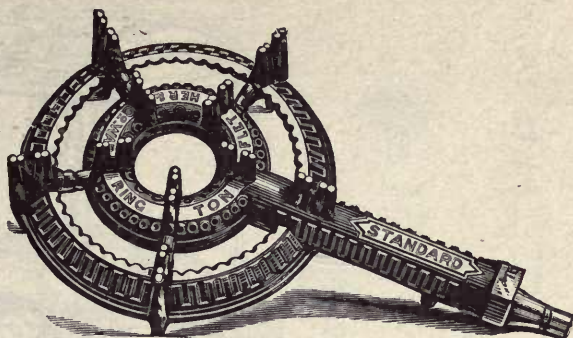
Diameter of rings, inches..... 3 4 5 6

Each\$1.25 1.50 1.75 2.00

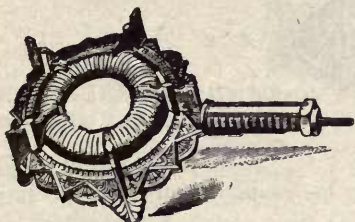
2147 BURNER, Same with stopcock 2.00 2.25 2.50 2.75



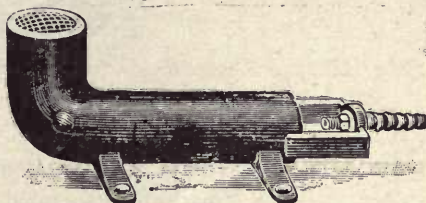
2148



2150



2149



2151

2148 BURNER, Fletcher's Cast Iron Evaporating Burner.

Sizes, inches	4	5	6½
Each	\$2.00	2.50	3.50

2149 BURNERS, Radial, Fletcher's.

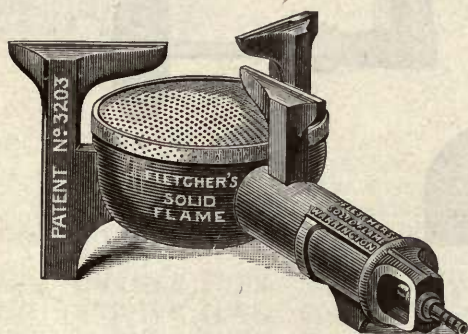
No. 1 R burner ring 3¾-in. gas used 12 feet per hour.....	\$2.50
No. 2 R burner ring 5 -in. gas used 18 feet per hour.....	3.25

2149a BURNERS. As above, with wheel valve for gasoline gas.

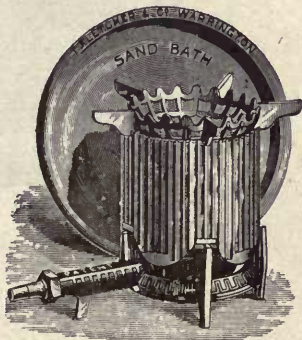
No. 1 R	3.75
No. 2 R	4.50

2150 BURNERS, Fletcher's Standard Boiling Burner.

Diameter, inches, for vessels.....	5½	7	8	10
Each	\$1.50	2.00	3.75	7.50

2151 BURNERS, Low form, extra large, with gauze top; height, 5 inches; diameter, 2¼ inches; length, 14 inches, each.....\$3.00

2151a



2152

2151a BURNERS, Boiling, Fletcher's, solid flame.

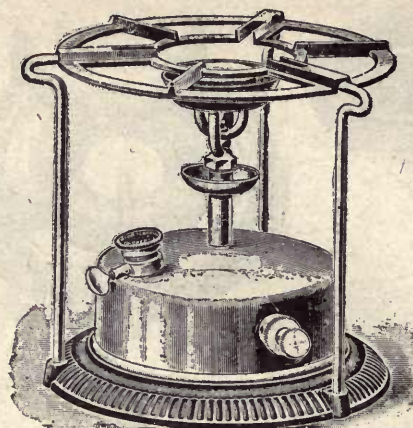
Small, diameter 3½-inch, gas used 12 feet per hour.....	\$1.75
Large, diameter 4½-inch, gas used 35 feet per hour.....	3.50

2151b Extra Perforated Metal Caps for above.

Small, each .....	.75
Large, each .....	.85

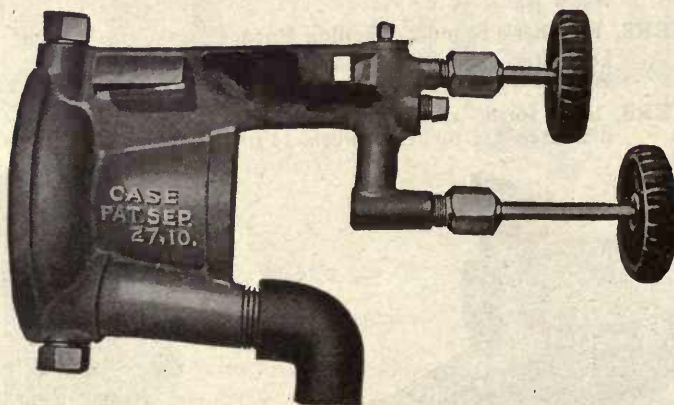
2152 BURNER, Fletcher's New Laboratory Burner, with stand for vessels and sand-bath.

Support for flask, diameter.....	4½	5¼	7	8
Support for vessels flat, diameter.....	6½	7½	9	11
Each	\$3.00	4.00	5.00	8.50



2153

- 2153 BURNER, Hydro Carbon**, burning vaporized kerosene which is automatically generated as fast as needed from ordinary kerosene; gives a hot blue flame without smoke or smell; height, 9 inches; diameter of base, 9 inches.....**\$8.50**
- 2154 BURNER**, same as above, but without tripod..... **7.50**



2155

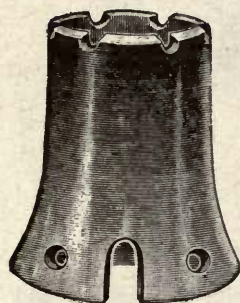
The Case "Inverted Type" of hydro-carbon burner is of the highest type yet produced. It is a burner adapted for high grade distillates in the construction of which all the unsatisfactory features of earlier types have been eliminated. It has the distinctive feature in that it accomplishes the rapid preliminary heating in the cleanest and safest way and is compact and easily operated. In fuel consumption, the Case "Inverted Type" requires but three-fourths as much as any other burner of equal size to produce the same number of heat units.

2155—BURNERS, Case Hydro-Carbon.

Diameter	1½	1¾	2	2¼	2½
Each	\$12.00	13.50	14.00	15.00	16.50



2156	BURNER, Attachment, Blowpipe Tube to set into the burner.....	\$0.25
2158	BURNER, Attachment, Short Tube to set over the burner, with rest for the blowpipe .....	.25
2160	BURNER, Chimneys, of Sheet Iron.....	.25
2161	BURNER, Chimneys, of Sheet Iron, with support.....	.25
2162	BURNER, Crowns, for heating dishes.....	.35
2164	BURNER, Forks, with attachment for burner.....	.50
2166	BURNER, Gauze Top, gives a large round flame.....	.35
2170	BURNER, Stars, for chimney supports.....	.25
2172	BURNER, Tripods, for supporting dishes.....	.25
2174	BURNER, Wingtop, for bending glass tubing.....	.25



2175



2175(a)



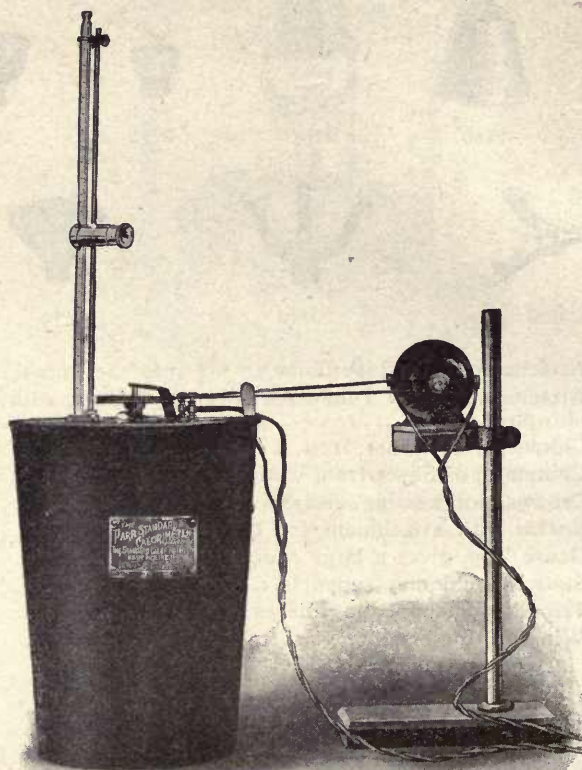
2175(e)

2175	BURNER, Guards, of vitrified earthenware. Protects the flame from drafts and affords a rigid and convenient support, 9 inches high, 8 inches diameter at bottom and 5 inches at top. Will be found a desirable addition to any laboratory.....	\$0.50
2175(a)	BURNER TUBE. Metallic, Flexible. Each tube has a rubber connection at both ends. Length, 2 feet.....	.30
2175(b)	BURNER TUBE. Same as No. 670, but 3 feet long.....	.40
2175(c)	BURNER TUBE. Same as No. 670, but 4 feet long.....	.50
2175(d)	BURNER TUBE. Same as No. 670, but 6 feet long.....	.75
2175(e)	BURNER ATTACHMENT. For supporting dishes, etc. Without burner	1.00

We are in position to manufacture or furnish many other styles of burners not listed in this catalog.

If interested in any particular style, we would be pleased to have you send us drawing and we will quote prices. Please advise quantity required.

CALORIMETERS



2176

2176 CALORIMETER, Standard—Parr's.

This instrument has been devised by S. W. Parr, professor of Applied Chemistry at the University of Illinois. The marked features of the method are accuracy, simplicity, ease and rapidity of manipulation. The results are absolute and not relative. The operations are such as can be carried on by one not especially skilled in laboratory processes. Oxygen under high pressure or any pressure is not used. Sodium peroxide is used as the combustion medium.

The time consumed in conducting a test on a weighed and dried sample should not exceed fifteen or twenty minutes. With this instrument a determination of the heat units has been made on the various types of fuel selected from widely different sources, including coal, coke, lignite and oils.

The outfit consists of the apparatus as indicated in cut, including a fine thermometer graduated to $1/20^{\circ}$ F. A two-litre measuring flask, chemical receptacle, measuring cup, 5-inch 100-mesh brass sieve with bottom, chemicals sufficient for fifty determinations, including special chemical for petroleum, etc., pincers, ignition wire, reading lens and camel's-hair brush.

Latest modification, with improved bomb, complete for electrical ignition,
without motor\$85.00

The following items are not included in the regular outfit, as they are usually to be found in Chemical Laboratories:

Electric Motor with variable speed for either direct or alternating current
110 or 220 volt 25.00
In ordering state current and voltage required.

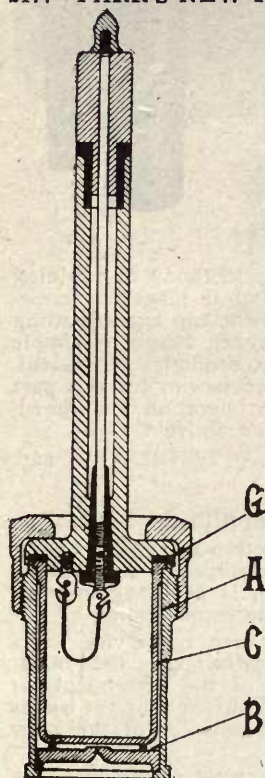
Bank of Resistance for 110 volts..... 7.00

Bank of Resistance for 220 volts..... 8.00

Water Motor and support..... 9.00

Replacements:

Thermometer 65—90° F. with certificate.....	\$12.00
Thermometer 65—105° F. with certificate.....	13.00
New Thermometer Reading Lens.....	3.00
Ignition wire, electric, per card.....	.75
Gaskets for bomb, per dozen.....	.50
Chemical—per ¼ lb. can (special sodium peroxide).....	1.10
Chemical—per ½ lb. can (special sodium peroxide).....	1.95
Chemical—per 1 lb. can (special sodium peroxide).....	3.00
Accelerator—per bottle, 2 oz. capacity.....	1.00
Special chemical, per bottle.....	1.00

2177—PARR'S NEW PEROXIDE CALORIMETER BOMB.

2177

A new and greatly improved form of bomb for the Parr Standard Calorimeter has been devised which has marked advantages over the old pattern. A summarized statement of advantages for more convenient reference is given below:

1. A removable fusion cup, or crucible, is provided with an extra cup for duplicating determinations. These cups are made of a special alloy which is immune to the action of the fused alkali. The materials making up the charge can be weighed out and added directly to the cups, which may then be transferred to the holders for use as desired.

2. The electric terminals are short and sturdy, and do not become bent or broken by use.

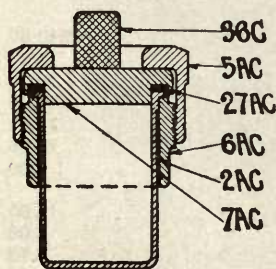
3. Provision is made by means of an air space about the fusion cup whereby the cup is permitted to come to a red heat, after which the surrounding water is brought into contact with the cup for quick extraction of the heat. This high temperature throughout the mass avoids the cooling effect of metallic walls which are in contact with water, thus securing a complete combustion with all types of coals.

4. By use of the fusion cups a removable bottom is avoided and the process of cleaning out the fusion is very much expedited. The cups are short enough to readily go into a small No. 3 or No. 4 beaker lying flatwise, in which way the fusion is readily dissolved out without loss.

5. The electric contacts are simplified and made much more convenient.

6. A simple additional accessory makes it possible to use the fusion cups for sulphur determinations alone. This is without doubt the ideal method for making a determination of sulphur in all organic compounds and especially to be recommended for use in determining the sulphur in coal. See description following under No. 2179.

Price\$35.00

2179 PARR'S NEW SULPHUR BOMB.

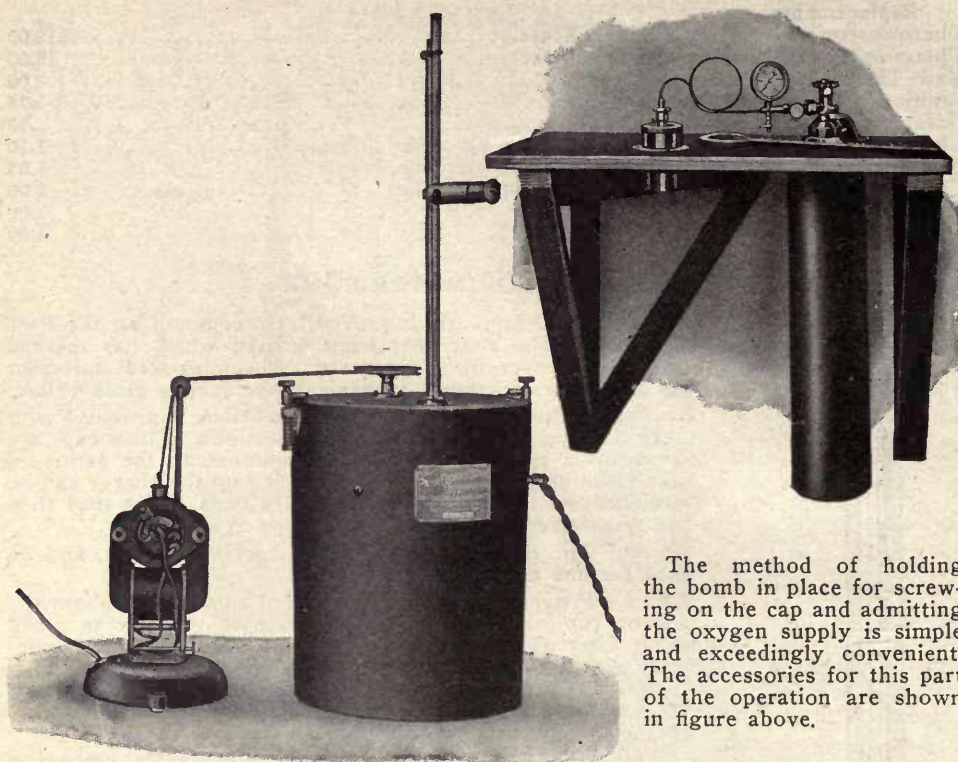
For sulphur determinations which are to be made independently of the calorimetric process, a special apparatus, as shown in Fig. 2D, has been devised. An adaptation has been made of the same fusion cup as that used in the calorimeter bomb (Fig. 2A). By reference to Fig. 2D, it will be seen that the fusion cup (2AC) has a cover (7AC) with a gasket (27AC), and a screw cap (5AC), by means of which the container is tightly sealed. The lower half of the fusion cup, however, is exposed, and by applying heat to the bottom of the cup the charge is readily ignited. After a moment, it is held under the tap for cooling, after which the cup is removed and the fusion dissolved out. In this way the solution containing all of the sulphur as sulphate may be made ready for precipitation in less than

five minutes and with no possible accession of sulphur from gas flames or other sources of contamination.

Results obtained by this method are believed to be the most reliable of any, and the time element is decidedly to its advantage.

For organic halogens, to replace the ordinary Carius method in the determination of chlorine, bromide and iodine, the use of this bomb will be found exceedingly convenient and expeditious.

Price\$23.00



The method of holding the bomb in place for screwing on the cap and admitting the oxygen supply is simple and exceedingly convenient. The accessories for this part of the operation are shown in figure above.

2181

2181 CALORIMETER—Parr's, Oxygen Bomb Calorimeter with "Illium" Bomb.

Not the least among the achievements in the construction of oxygen bombs of the Mahler-Atwater type is the doing away with the porcelain or platinum lining as a result of the development of an alloy which is proof against the solvent action of the acids generated in connection with the combustions.

The first successful bomb made of this metal has been in service for a number of years and has been used in upwards of 2,000 calorimetric determinations without giving any evidence of corrosion. Many of the determinations were made parallel with a platinum-lined instrument, and throughout the series there was every evidence of an exact equivalent in the behavior of the alloy (Illium) bomb.

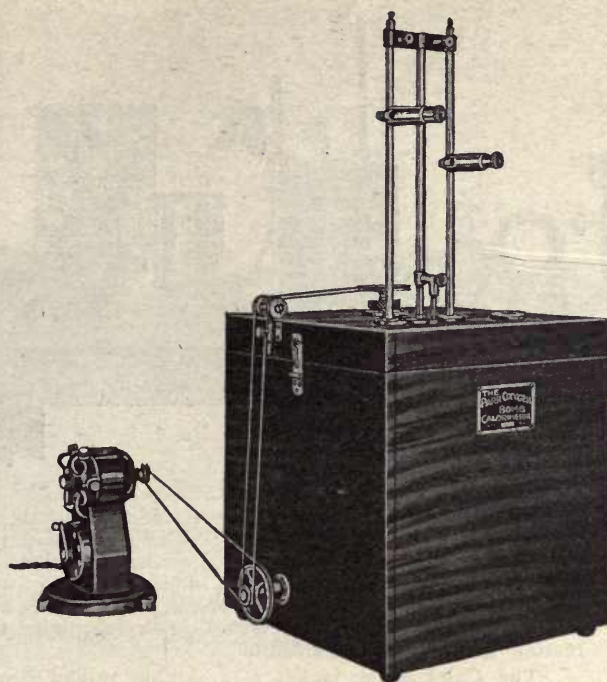
The calorimeter complete with bomb, water container, insulating vessel with cover, stirrer and pulley, oxygen connection with gauge, needle valve and couplings, octagon holder for bomb, with spanner wrench, one-half dozen capsules of special alloy, reading lens and support, special ignition wire and gaskets. Without motor or thermometers.....\$285.00

ACCESSORIES:

Bomb only	\$210.00
Water Container.....	12.00
Insulating Vessel with cover, stirrer and pulley.....	50.00
Oxygen Connection with gauge, needle valve and couplings.....	27.50
Octagon Holder for Bomb, with spanner wrench	12.00
Electric Motor with variable speed direct or alternating.....	25.00
Capsules (special alloy), Illium Metal, each	3.00
Thermometer graduated in 1/20° F. with U. S. Bureau of Standards certificate	15.00
Reading Lens and support.....	3.00
Ring Support for holding Calorimeter cover with thermometer.....	2.75
Special Ignition Wire, per card.....	.75
Large Gaskets for Bomb, per dozen.....	1.00
Small Gaskets for Valve, per dozen.....	1.00
Small Gaskets for Union, per dozen.....	.50

Extras:

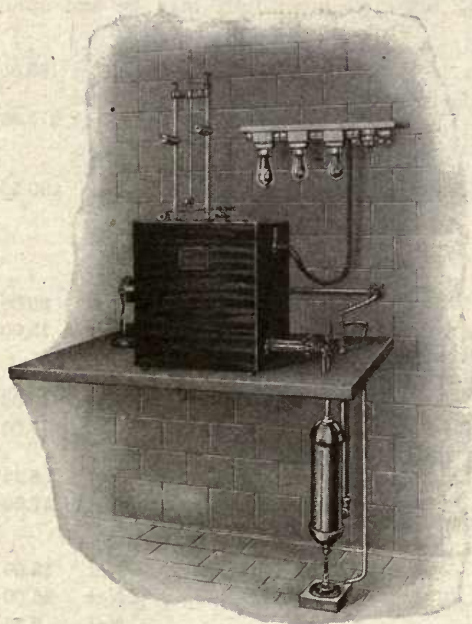
Beckman's Differential Thermometer graduated to 1/100° C., with certificate of standardization.....	25.00
Oxygen cylinder with 100 cubic feet of oxygen, cylinder returnable.....	35.00
Ring Support for holding bomb cap while adjusting fuse wire, fuel capsule, etc.....	3.00



2183

2183 CALORIMETER—Parr's Adiabatic with "Illium" bomb.

Another form of Calorimeter, and that of the Adiabatic type, has just been perfected, and its operation in actual use has been so eminently satisfactory that it is now being regularly manufactured for the trade. It is the completion of a design which has been in process of development for some years by Professor S. W. Parr of the University of Illinois.

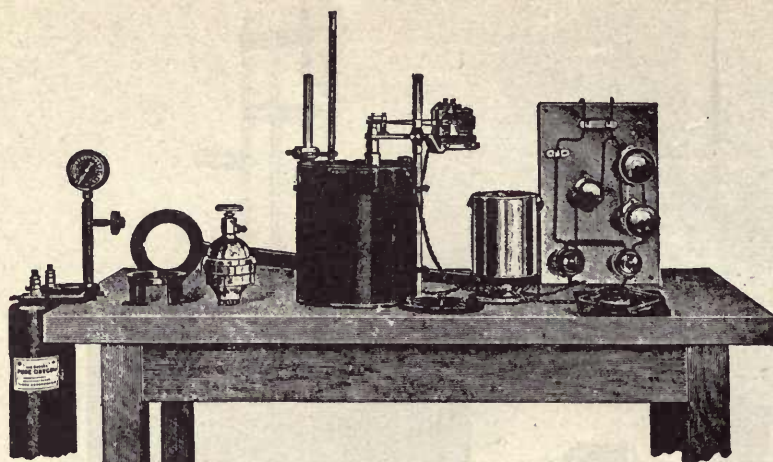


Showing Water Reservoir Heated by
Gas Flame

The adiabatic principle has been secured, not by the use of the Dewar, or vacuum arrangement, with its somewhat questionable immunity from variation, nor is use made of any chemical or electrical method of heating the surrounding water. The principles involved are carried out as follows:

A supply of hot and cold water is automatically provided immediately underneath the desk on which the calorimeter is installed. This may be drawn upon either to raise or lower the temperature of the water in the surrounding medium. By means of a stop cock and overflow, hot water, for example, can be instantly discharged into the jacketing water. The lag, therefore, is only that incident to the stirring of the water and the response as shown on the thermometer occurs at once.

Price Without Motor or Thermometer.....\$375.00



2185

2185 CALORIMETER, Emerson's, one of the most modern bomb calorimeters for determining the heating value of solid and liquid fuels.

The Bomb is made of steel, consisting of two cups joined by means of a heavy steel nut. The lining is of sheet metal, spun to fit the interior. The pan holding the combustible is usually of nickel and so are the supporting wires. The fuse wire for general fuel testing should be of platinum.

The Calorimeter jacket is a double walled copper tank. The calorimeter bucket is of light sheet brass.

The Stirring Device consists of a propeller fitted shaft inclosed in a vertical tube to facilitate its action in circulating the water. The stirrer is mounted on a post on the calorimeter jacket as is the thermometer holder. The motor is driven by a 110-volt circuit and should be placed in series with a 16 C. P. lamp. If so desired, a battery driven motor can be specified in ordering the apparatus.

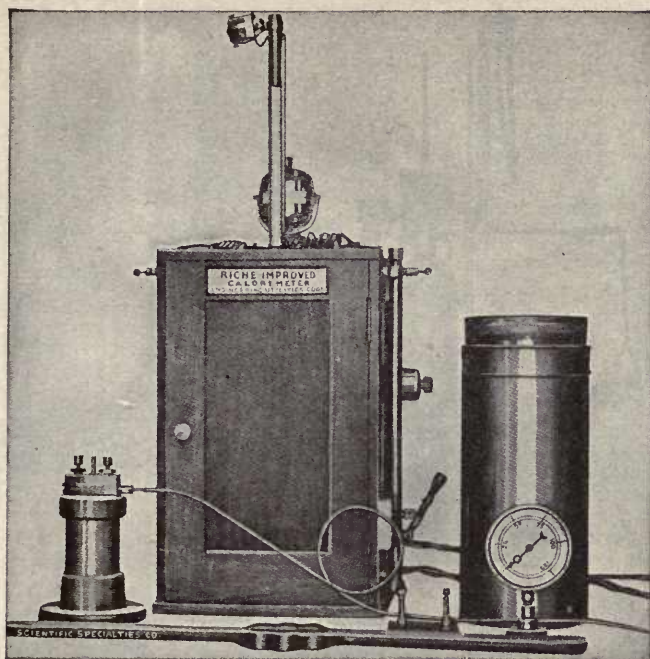
The Oxygen Piping is especially strong and durable and is designed for two cylinders. Other accessories such as iron plate holder, swivel table, spanner or wrench are furnished with the outfit.

A pamphlet describing the instrument fully may be had upon application.

2185(a) CALORIMETER , The complete Calorimeter as described with Nickel lined bomb.....	Net 180.00
2185(b) CALORIMETER , As above, with Gold rolled copper lined bomb and nickel fittings.....	Net 275.00
2185(c) CALORIMETER , As above, with Platinum lined bomb and Platinum fittings, according to the market price of platinum, about	Net 490.00

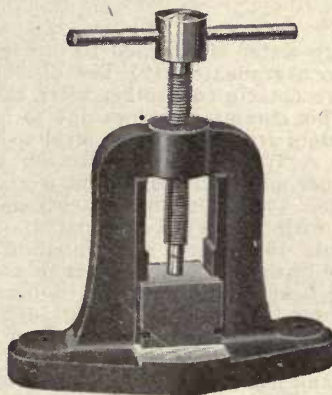
ACCESSORIES:

CALORIMETER THERMOMETER , Standard, graduated on stem from about plus 18 to 30°C in 1/100°C with certificate of corrections	Net 30.00
CALORIMETER THERMOMETER , as above, without certificate.....	Net 15.00
CALORIMETER THERMOMETER , Beckmann's Differential, with a range of about 6°C graduated in 1/100°C with certificate of corrections	Net 30.00
CALORIMETER THERMOMETER , as above, without certificate.....	Net 15.00
CALORIMETER CYLINDERS of Oxygen under high pressure; 40 gallons capacity	Net 8.25
CALORIMETER CYLINDERS of Oxygen, as above, 100 gallons capacity. Net (Cylinders returnable at \$6.00 and \$12.00, respectively.)	Net 17.00
New Parts:	
Nickel Lining for bomb.....	Net 12.00
Gold rolled copper lining for bomb.....	Net 95.00
Fuel pan and support.....	Net 2.25
Nickel fuel pan.....	Net .55
Nickel binding posts for interior of bomb.....	Net .90
Nickel screw for deflector or interior of bomb.....	Net .35
Large lead gaskets. Per dozen.....	Net 1.50



2191

1. Bomb.
2. Bomb Holder.
3. Cork Lined Case.
4. Thermometer.
5. Motor.
6. Vacuum Cup.
7. Pressure Gauge.
8. Rheostat.
9. Spanner Wrench.



Briquetting Machine 2191-10

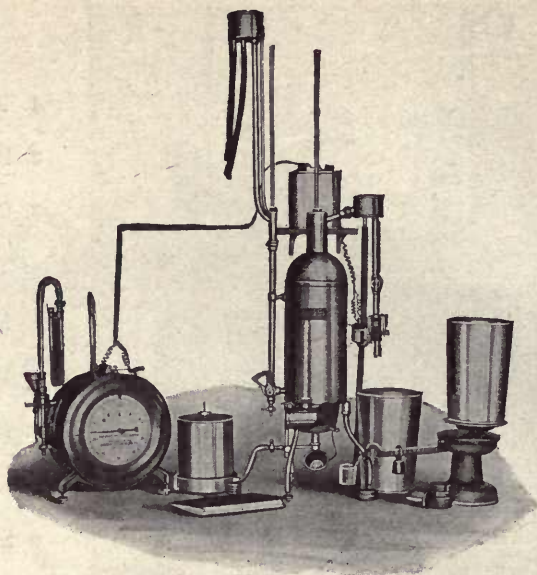
2191 CALORIMETER, The Riche Adiabatic.

The Riche Adiabatic Calorimeter is constructed along practical lines, capable of standing the strain of continuous work. The inside walls of the cabinet are lined with one inch pressed cork and on the cover in addition to the cork is a piece of half-inch hairfelt, making a tight joint with the top of the vacuum cup. All fittings are brass, heavily nickelled.

The rapidity with which results are obtained is a decided advantage. A complete determination may be made in 10 to 15 minutes with an accuracy of (1) three calories, thus saving from fifty to seventy-five per cent of time. The maximum time required for reading is eight minutes.

The bomb is of the Mahler-Kroeker two valve porcelain lined type, guaranteed for 3,000 determinations, but it should be good for at least 8,000 combustions if proper care is taken.

CALORIMETER, Riche Improved Adiabatic, complete with thermometer.....\$275.00
 " " " " " without thermometer.. 250.00



2193

2193 CALORIMETER—Sargent's, for gas: The only apparatus conforming with the suggestions of American authorities, being the most advanced type of instrument for testing the thermal value of inflammable gases. It has the following advantages:

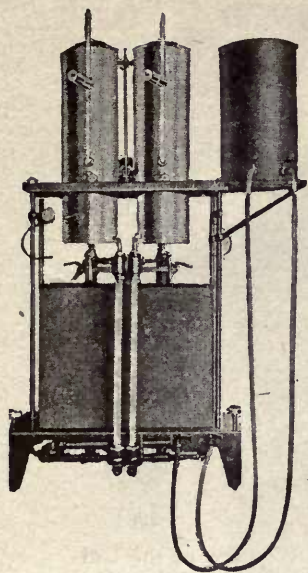
(1) The discharge water is weighed to one-hundredth of a pound instead of being measured in a graduate. (2) The discharge water is switched automatically from one receptacle to another after each one-tenth of a cubic foot of gas is burned. This eliminates errors due to hand manipulation. (3) Inlet and outlet thermometers are on the same level so that they can be read almost simultaneously. (4) A Wet Pressure Governor controls the pressure of the gas entering the burner and a constant pressure is easily maintained by means of adjustable weights. (5) To maintain a constant flow the inlet and outlet pipes are provided with wiers. A graduated quadrant valve regulates the amount of water used. (6) Since a determination can be made every three or four minutes, a curve of the heat value extending over any length of time may be plotted. (7) The heat value of the gas is determined directly in B. T. U. (8) The Bunsen burner has two tips and is adjustable for gas having 100 to 1500 B. T. U. per cubic foot. (9) The calorimeter is made of copper and brass and is handsomely nickel-plated. (10) The Wet Test Gas Meter is made of heavy brass and tin and has a water level indicator outside of the gauge glass. The meter is graduated to 0.001 cubic foot.

The complete outfit consists of the first six items below.

PRICE LIST

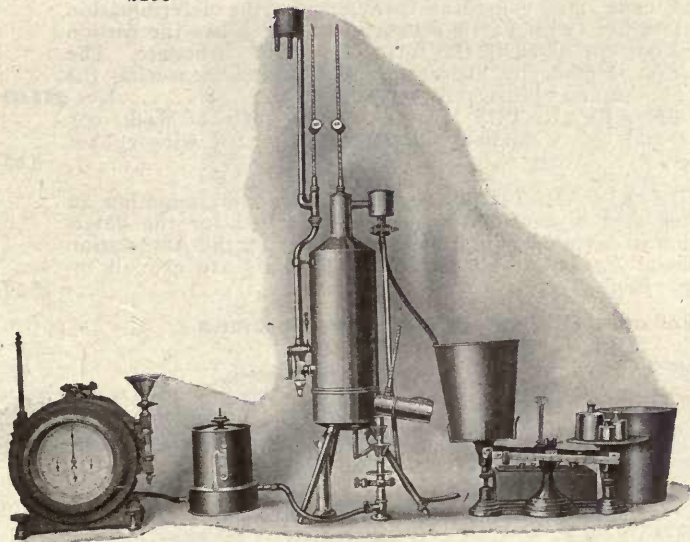
Calorimeter Body with automatic attachment Bunsen burner, tubing, exhaust thermometer and beaker	\$135.00
Two very high grade inlet and outlet thermometers, graduated to $1/10^{\circ}$ F.	17.00
Wet Pressure Governor with weights.....	17.00
Wet Test Gas Meter, with all attachments.....	65.00
Special 10-lb. scales weighing to hundredths of a pound.....	15.00
Two Balanced nickeled weighing pails.....	6.00
Specially fitted shipping chest.....	50.00
Table of Standard Reduction Factors for Gas.....	1.50

Descriptive Pamphlet Upon Application.



2195

- 2195 CALORIMETER**—Parr's, for Gas, devised by Prof. S. W. Parr, of the University of Illinois. This instrument is constructed upon radically new lines. A standard and an unknown gas are burned side by side under identical conditions. A ratio of values is thus established in a manner which eliminates errors due to radiation, metering, variable pressures, speed of combustion, etc., etc. This is decidedly the most accurate apparatus thus far devised for the measuring of heat values of gases of all types. Price\$275.00



2197

- 2197 CALORIMETER, American Junkers.** This apparatus is of the same general design (embodying, however, American improvements), and operates on the same principle as the original German Junkers Calorimeter which has been regarded by gas experts as the most satisfactory calorimeter in use. Calorimeter with all improvements, inlet and outlet water thermometers in tenths of a degree with telescopic sights and manufacturers' certificates giving correction factors, if any, exhaust thermometer, wet test meter, complete with

thermometer, wet regulator with pressure gauge, fine equal arm weighing balance, set brass weights in block, two copper pails, glass graduate for condensation, twelve feet pure rubber tubing, correction table for temperature and pressure, booklet on calorimetry, complete as shown in illustration.\$275.00

- 2198 CARBONATE APPARATUS**—Barker. For determining the percentage of carbonates in limestone and other materials.

The principle upon which the apparatus is based is that of a hydrometer which takes account of the law that when an object (the hydrometer) is immersed in a liquid, it is buoyed up by a force equal to the weight of the liquid displaced by the object. In this apparatus the carbon dioxide gas released by the sample decreases the weight. The apparatus consequently rises in the water in which it is immersed, recording on the graduated scale the percentage of carbonates from which gas escaped.

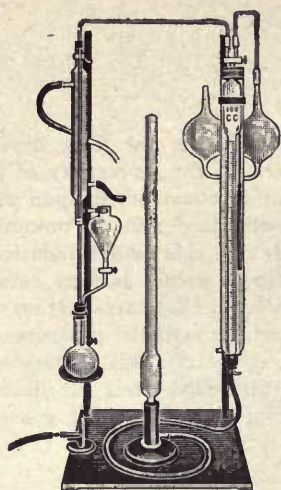
Every hydrometer is thoroughly tested before leaving the factory and is accompanied by a certificate.

BARKER CARBONATE APPARATUS, complete with Hydrometer, jar, thermometer, graduated cylinder dropping pipette and one pound of Hydrochloric Acid.

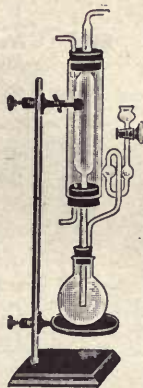
Complete as described.....\$12.00
Hydrometer only..... 9.00



2198



2199



2201



2203

- 2199 CARBON APPARATUS**, Parr's, designed by Prof. S. W. Parr, of the University of Illinois, for the determination of the total carbon in coal, coke, etc., using the residue from the determination of heat values (with Parr's calorimeter) which has the carbon of the coal combined in the form of sodium carbonate. The estimation is made by liberating the CO_2 and measuring the gas. The outfit as illustrated.....Net \$45.00
- 2201 CARBON DIOXIDE APPARATUS**, Classen's, consisting of flask, condenser and safety funnel with stop-cock, fitted with rubber stoppers 5.50
- 2203 CARBON DIOXIDE APPARATUS**, Knorr's, for the determination of carbonic acid in carbonates, as recommended for the determination of carbonic acid in baking powder by the Association of Official Agricultural Chemists. All joints are ground together. Each 12.50

N. B.—For other CO_2 Apparatus, see Gas Apparatus.



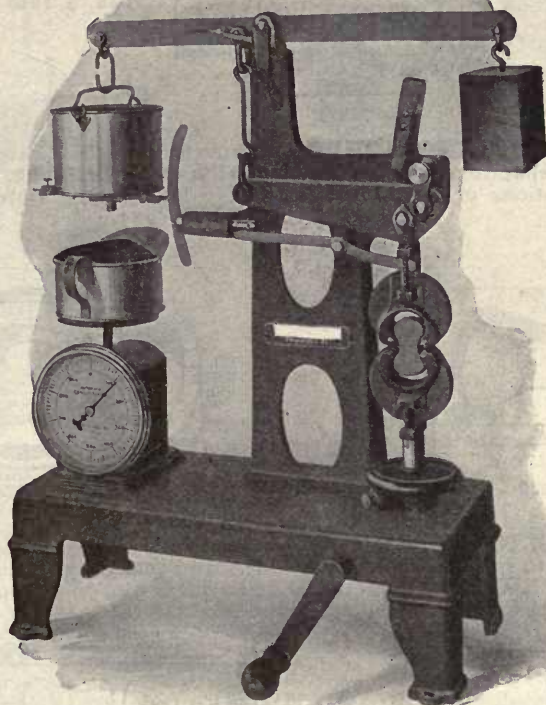
2224



2226

- 2224 CASSEROLES**, glazed with exception of rim, with lip and flat porcelain handle. Coor's ware.
- | Size number..... | 1 | 2 | 3 | 3a | 4 | 4a | 5 | 6 | 7 |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Outside dia., mm.. | 50 | 70 | 85 | 95 | 110 | 135 | 135 | 165 | 175 |
| Inside dia., mm.... | 47 | 66 | 80 | 90 | 105 | 130 | 130 | 160 | 170 |
| Height, mm..... | 25 | 35 | 45 | 50 | 62 | 90 | 80 | 95 | 130 |
| Capacity, cc. | 30 | 75 | 150 | 210 | 375 | 500 | 750 | 1250 | 2000 |
| Each | \$0.40 | \$0.50 | \$0.60 | \$0.80 | \$1.00 | \$1.50 | \$1.80 | \$2.25 | \$3.90 |
- 2225 CASSEROLES**, Glazed, with exception of rim, with lip and extra long handle. Size number, 4; diameter, 117 mm.; height, 56 mm.; capacity, 360 cc. Each.....\$1.75
- 2226 CASSEROLES**, Royal Guernsey Porcelain, with cover and wood handle. Glazed inside and out.
- | Size number | 00 | 0 | 1 | 2 | 3 | 4 |
|--------------------|--------|--------|--------|--------|--------|--------|
| Capacity, cc. | 125 | 250 | 375 | 500 | 720 | 1000 |
| Diameter, mm. | 90 | 105 | 110 | 120 | 152 | 172 |
| Each | \$0.50 | \$0.60 | \$0.75 | \$1.00 | \$1.55 | \$1.75 |
- 2227 CASSEROLES**, Fuser Silica.
- | Size number | 1 | 2 | 3 | 3a | 4 |
|--------------------|--------|--------|--------|--------|--------|
| Capacity, cc. | 30 | 75 | 150 | 210 | 375 |
| Dia. body, cm..... | 5 | 7 | 8.5 | 9.5 | 11 |
| Each | \$2.25 | \$2.75 | \$3.25 | \$4.20 | \$5.50 |

CEMENT TESTING APPARATUS



2229

2229 - CEMENT TESTING MACHINE, Olsen's New Automatic Shot Form. The principal advantages of this machine are as follows:

The machine is automatic to its full capacity and is not touched from start to finish of test. The instant the briquette breaks, the breaking load is read on the dial of the scale.

The load is applied with absolute smoothness, and impact from falling shot is eliminated.

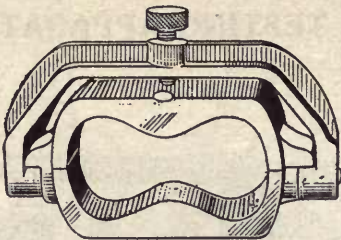
The cut-off on the shot kettle is practically instantaneous. All shot that has escaped from the kettle has already done its work and the column of falling shot in the air when the specimen breaks is therefore weighed as it should be.

A new grip which brings the strain uniformly on the specimen is used.

The briquette hangs clear of the frame of the machine, giving plenty of room for the hands when adjusting specimens.

This is widely used and thoroughly satisfactory outfit; 1,000 lbs. capacity; length, 24 inches; height, 26½ inches; weight, 50 lbs.

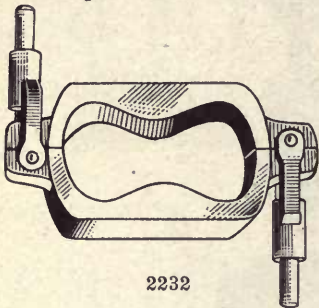
Price\$135.00



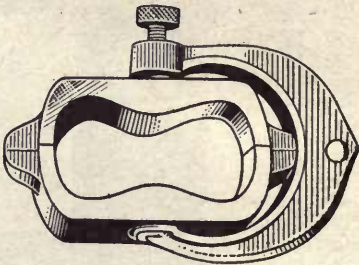
2231

Patented
Feb. 8, 1910

2231 CEMENT BRIQUETTE MOULD. Improved Standard. (Patented.) With means for separating sections automatically without rapping, according to the specifications of the American Society for Testing Materials.....**\$2.75**



2232

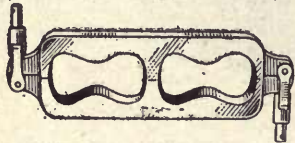


2232 (a)

2232 CEMENT BRIQUETTE MOULD. Standard, with end clamps, according to specifications of the American Society for Testing Materials..**\$2.75**

2232(a) CEMENT BRIQUETTE MOULD. Standard, with C Clamp..... **2.75**

2232(b) Extra Clamp, C Form, to be used with No. 2232(a)..... **.30**



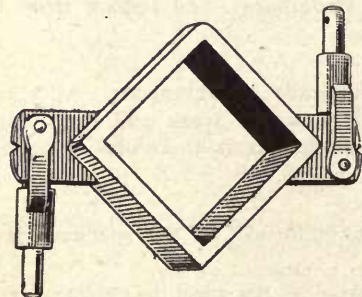
2233



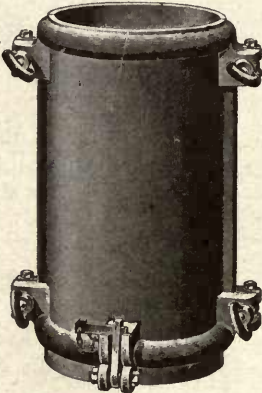
2233 CEMENT BRIQUETTE GANG MOULDS—Of brass.

- | | | | |
|----|----------------|----------------|----------------|
| a. | 2-Gang Moulds. | Each, net..... | \$ 6.00 |
| b. | 3-Gang Moulds. | Each, net..... | 9.00 |
| c. | 4-Gang Moulds. | Each, net..... | 12.00 |
| d. | 5-Gang Moulds. | Each, net..... | 15.00 |
| e. | 6-Gang Moulds. | Each, net..... | 18.00 |

2233-1 CYLINDER MOULDS. Made of cast iron, with hinged clamps. Bottom plate is removable. Accurately machined to size. Can be furnished in all standard sizes. Write for prices, stating size and quantity desired.



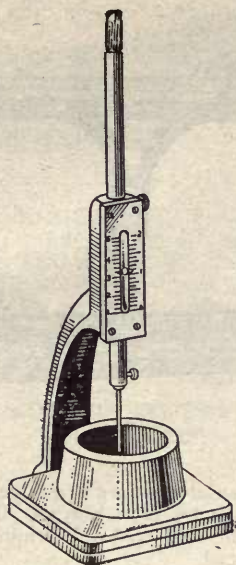
2235



2233-1

- | | | | |
|----------------|---------------------------|-------------------------|---------------|
| 2235 | CUBE MOULD, BRASS. | One inch, per gang..... | \$3.00 |
| 2235(a) | CUBE MOULD, BRASS. | Two inch, per gang..... | 4.00 |
| 2235(b) | CUBE MOULD, IRON. | Six inch, per gang..... | 8.00 |

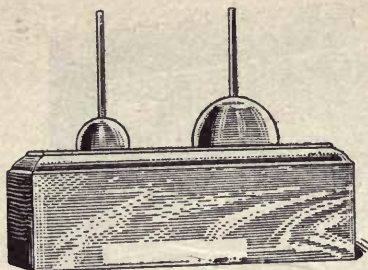
(Other sizes made to order on request.)



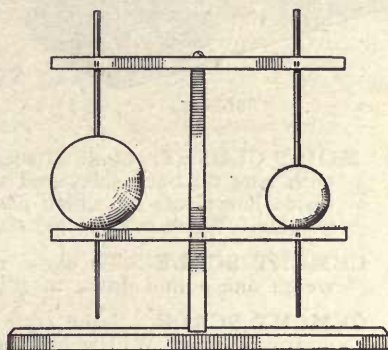
2235(f)



2235(e)

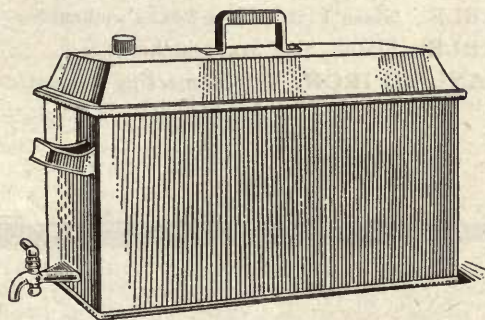


2235(h)



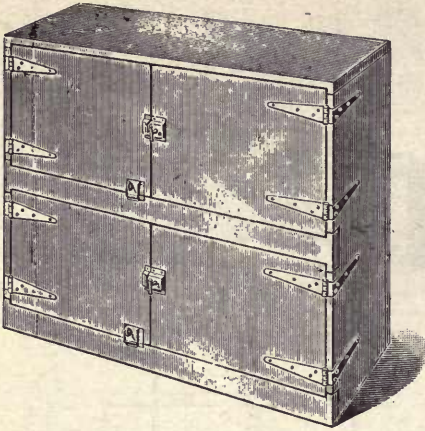
2235(j)

- 2235(e) PAT MOULD** (Forming Pat.) Used for forming pats of neat cement intended for steaming.....\$2.50
- 2235(f) VICAT NEEDLE APPARATUS.** Bramwell's improved form. Very convenient to determine the normal consistency and time of setting of cement. The plunger ends are of different diameter. The small needle, when not in use, can be reversed and screwed into the body of the main plunger.....20.00
- 2235(g) EXTRA RUBBER MOULD** for No. 2235f..... 3.00
- 2235(h) GILMORE NEEDLES.** These needles are used for determining both the initial and the final set of the cement. They consist of two steel needles. One needle $\frac{1}{12}$ of an inch in diameter, loaded with a weight of $\frac{1}{4}$ pound, and one needle $\frac{1}{24}$ of an inch in diameter, loaded with a weight of one pound..... 6.00
- 2235(j) GILMORE NEEDLES.** Mounted in a vertical position so that the needles are perpendicular to the surface of the pat..... 7.50

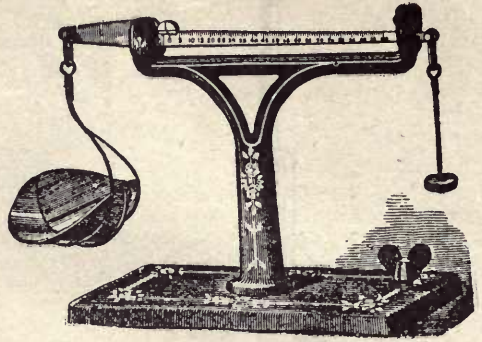


2235(k)

- 2235(k) STEAMING APPARATUS.** For boiling and steaming test specimens. Size, 12x12x24 inches. Made of copper, with stand.....\$35.00

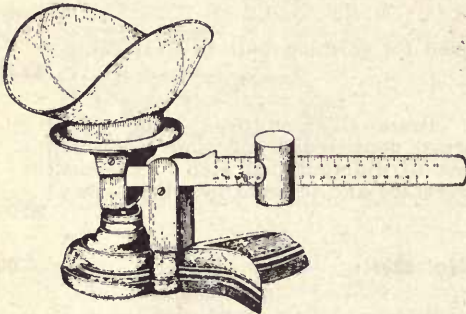


2235(m)



2235(p)

- 2235(m) MOIST CLOSET.** Made of soapstone. The wooden doors are covered with zinc on both sides and are held in place by iron hinges. The inside has cleats on which glass strips can be laid to hold briquette moulds. Write for prices, stating size desired.
- 2235(p) CEMENT SCALE.** To show the finess of cement. This scale will weigh one pound down to 1/10000 of a pound.....\$20.00
- 2235(q) CEMENT SCALE.** Same style as No. 2235(p), but graduated in the metric system. Will weigh 500 grams down to 1/100 gram..... 20.00



2235(r)

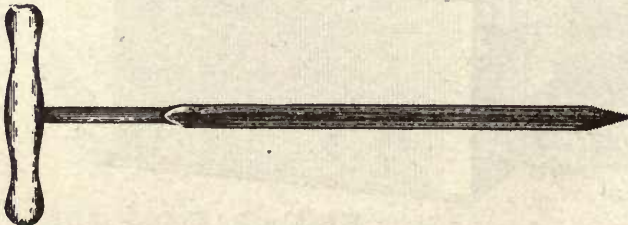


2235 (t)



2235(v)

- 2235(r) SAND SCALE.** For estimating the quantity of the various sizes of sand. The upper part of beam is graduated 16x½ ounces, the lower part of beam is graduated from 0 to 100 per cent.....\$ 7.50
- 2235(s) SAND SCALE.** Same style as No. 2235(r), but beam graduated in the metric system, being graduated 50 grams in 100 parts representing per cent..... 7.50
- 2235(a) MIXING TABLE.** Glass Plate. Size 24x24 inches..... 8.00
- 2235(u) MIXING TABLE.** Slate. Size 24x24 inches..... 7.00
- 2235(v) PAN, GALVANIZED IRON.** For immersing briquettes in water until ready for testing. Size, 24x24x3 inches..... 3.50



2235w

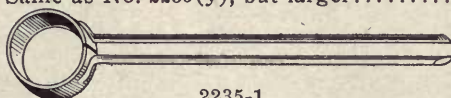
- 2235(w) CEMENT SAMPLER.** With auger point to bore staves. For obtaining samples from center of barrel.....\$ 7.50



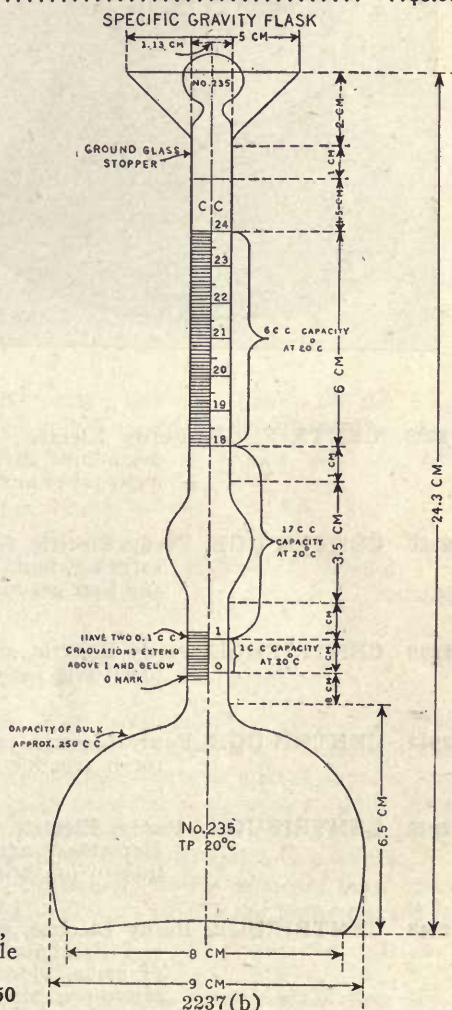
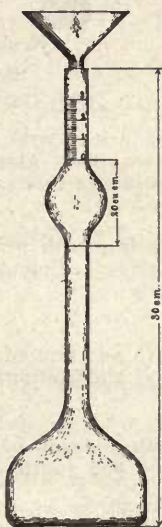
- | | | | |
|---------|---------|---|--------|
| 2235(x) | BRUSH. | For cement briquette moulds, with brass wire and wooden handle. Brush part 5 inches long..... | \$0.75 |
| 2235(y) | TROWEL. | For mixing cement. Small size..... | 1.00 |
| 2235(z) | TROWEL. | Same as No. 2235(y), but larger..... | 1.25 |

- | | | | |
|---------|---------|------------------------------------|------|
| 2235(y) | TROWEL. | For mixing cement. Small size..... | 1.00 |
|---------|---------|------------------------------------|------|

- | | | | |
|---------|---------|--------------------------------------|------|
| 2235(z) | TROWEL. | Same as No. 2235(y), but larger..... | 1.25 |
|---------|---------|--------------------------------------|------|



- | | | |
|--------|--|--------|
| 2235-1 | SOUNDNESS TEST APPARATUS, Le Chatelier. Very easily operated.
With instructions | \$3.00 |
|--------|--|--------|



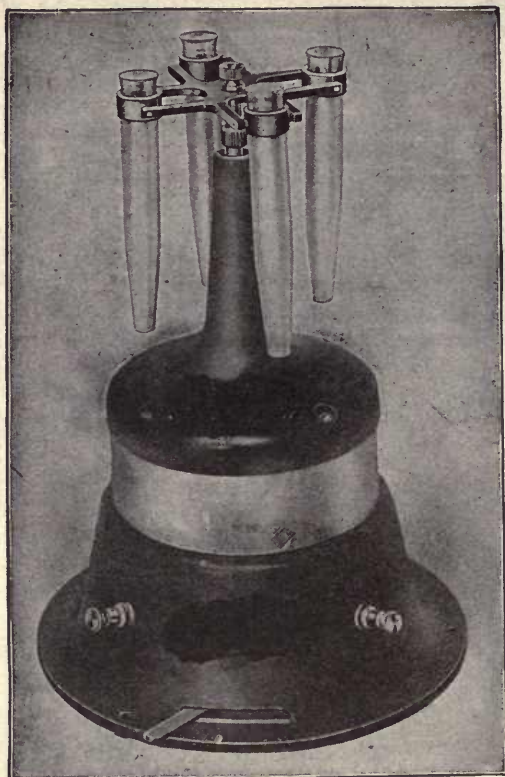
- 2236 SPECIFIC GRAVITY APPARATUS,**
Schumann's specific gravity bottle
with tube graduated to 50 cc.
in 1/10 cc.....**\$3.50**

- 2236(a) SPECIFIC GRAVITY APPARATUS, Le Chatelier's. For cement.....\$4.00

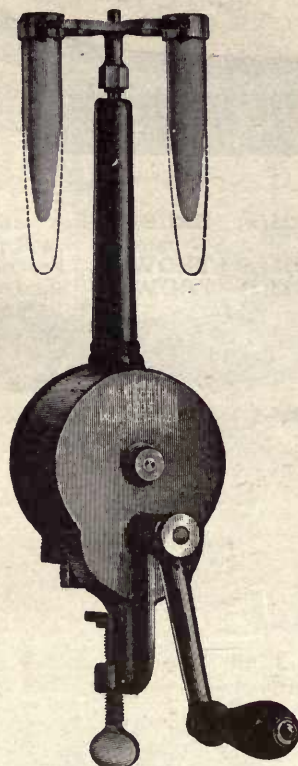
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|------|---|------|
| 2237 | <p>SPECIFIC GRAVITY APPARATUS, Jackson's. Consisting of the burette so graduated as to give direct readings in specific gravity, and the heavy Erlenmeyer flask with hollow ground glass stopper as described in R. K. Meade's Portland Cement (Page 281, 1906). The burette and flask</p> | 7.50 |
|------|---|------|

- | | | |
|---------|--|------|
| 2237(a) | EXTRA FLASK for No. 2237 Specific Gravity Apparatus..... | 3.50 |
|---------|--|------|

- | | | |
|---------|--|------|
| 2237(b) | SPECIFIC GRAVITY APPARATUS. Standard. Improved form of No. 2236(a) | 6.00 |
|---------|--|------|



2239

 $\frac{1}{4}$ Natural Size.

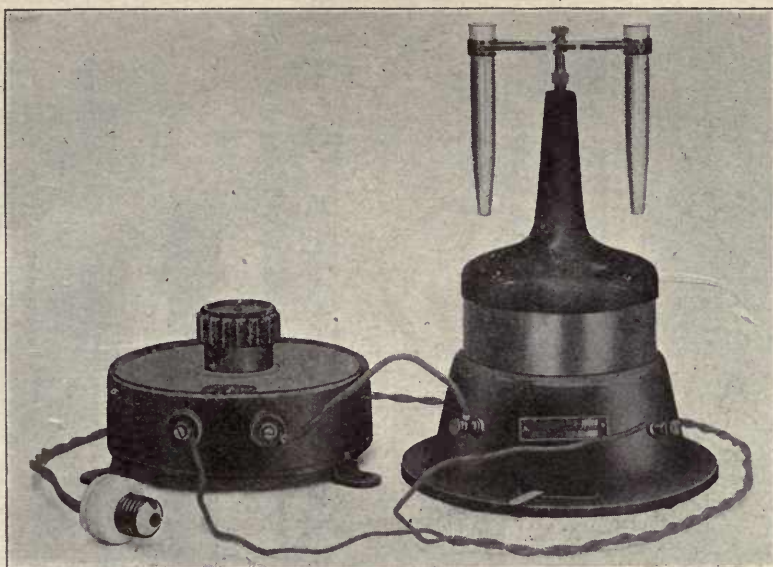
2244

- 2238 CENTRIFUGE**, Purdy Electric, for examination of urine, with double urine arm carrying two tubes, two plain glass sediment tubes and two graduated percentage tubes.....**\$38.40**
- 2239 CENTRIFUGE**, Purdy Electric, for examination of urine, with urine arm carrying four tubes, four plain glass sediment tubes, and four graduated percentage tubes..... **43.75**
- 2240 CENTRIFUGE**, Purdy Electric, same as No. 2238 with addition of Hematocrit arm for examination of blood and sputum..... **44.50**
- 2241 CENTRIFUGE**, Purdy Electric, same as No. 2239, with addition of Hematocrit arm for examination of blood and sputum..... **49.75**
- 2242 CENTRIFUGE**, Purdy Electric, same as No. 2238, with addition of Hematocrit arm and precipitating frame for concentration of bacteria **50.00**
- 2243 CENTRIFUGE**, Purdy Electric, same as No. 2239, with both Hematocrit and Precipitating Arm complete for the examination of urine, blood and sputum and the manipulation of Micro-organisms **55.50**

The above Centrifuges are arranged for the incandescent current of 100 to 115 volts, the price of the Centrifuge for the 220 volt current will be found on the next page.

IMPORTANT. When ordering specify the voltage and current.

- 2244 CENTRIFUGE**, "Celeritas," with urine arm, two aluminum shields, one plain glass sediment tube and one graduated glass percentage tube, complete for the sedimentation of urine**\$12.00**



2249

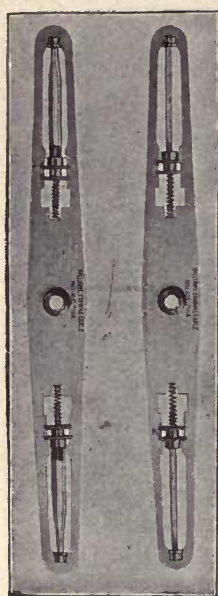
- 2245 CENTRIFUGE, "Celeritas,"** same as No. 2244, but with Arm for holding four Tubes, with four Aluminum Shields, two graduated and two plain Tubes. This machine is capable of doing the work of two ordinary centrifuges.....**\$14.50**
- 2246 CENTRIFUGE, "Celeritas,"** same as No. 2244, with two Tubes for the examination of Urine and Hæmatocrit for the examination of Blood and Sputum..... **15.00**
- 2247 CENTRIFUGE, "Celeritas,"** same as No. 2246, with four Tubes for the examination of Urine and with Hæmatocrit for the examination of Blood and Sputum **20.00**
- 2249 CENTRIFUGE, Purdy Electric, with Adjustable Speed Regulator.**

In order to regulate the speed of the Centrifuge more delicately than is possible with the regular device attached to the instrument and to obtain any rate of speed desired within the scope of the motor or to keep the instrument at a fixed speed where the current varies or the load is increased, a speed regulator is necessary. It is often important that an entire series of experiments should be carried on with an absolutely uniform speed. This is mostly not possible without a speed regulator, owing to the varying strength of all electric currents. Again, extremely fragile sediment must often be handled with medium speed, while very light sediments require the highest speed to produce sedimentation.

The speed regulators can be supplied with any of the Purdy Centrifuges, Nos. 2238-2243 inclusive, for either the direct or alternating 60 cycle current of 100 to 115 volts at an additional cost of**\$9.50**

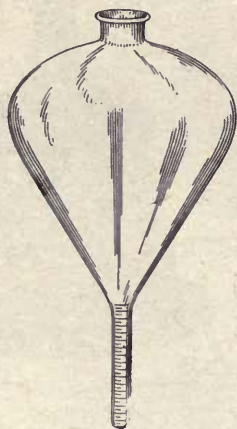
THE PURDY CENTRIFUGE FOR THE 220 VOLT DIRECT CURRENT

We supply the Purdy Centrifuge for the 220 volt direct current in all cases with the speed regulator. It is supplied in all combinations given under Nos. 2238-2243 inclusive, at an additional cost of**\$14.50**



2252

2250



2253



2260



2262



2272



2275

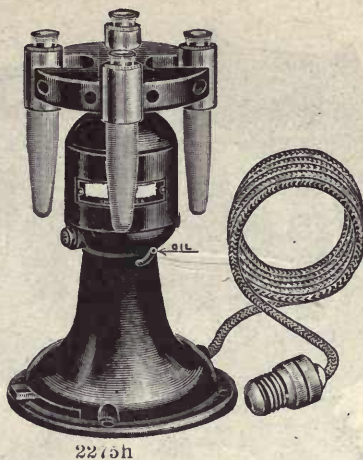
CENTRIFUGE ATTACHMENTS

WILL FIT ALL CENTRIFUGES Nos. 2238-2247

2250	HAEMATOCRIT, with two graduated blood tubes and two plain sputum tubes	\$ 6.00
2252	PRECIPITATING ARM, with two tapering tubes for the manipulation of micro-organisms	6.00
2253	GOETZ TUBE, for phosphorus determination, with graduated tip	1.10
2253a	METAL SHIELD, for carrying No. 2253 Goetz Tube	1.20
2254	PERCENTAGE TUBE, for blood analysis, for use with Haematocrit .....	.90
2256	PLAIN SPUTUM TUBE, for use with Haematocrit .....	.40
2258	PRECIPITATING TUBE, with plug and six washers, for the manipulation of micro-organisms .....	.75
2259	DOME PROTECTOR for Purdy Electric Centrifuges. To protect the operator from flying particles or liquid and to avoid contact with the rapidly moving arms. It also lessens the air resistance and proportionately increases the speed. Fits Centrifuges Nos. 2238-2243	10.75
2260	GRADUATED URINE TUBE, designed by Dr. Charles W. Purdy for use with the Purdy Electric Centrifuge, and wherever his methods are employed. This tube is fully graduated to 15 c.c., with very tapering tip for the measurement of very small quantities of sediment .....	.60
2262	PLAIN UNGRADUATED TUBE, same size as No. 2260 .....	.20
2264	TUBE FOR MILK ANALYSIS. To obtain absolutely reliable test of either breast or cow's milk, we have devised the graduated milk tube. It will give results accurate to within 1/5 of 1% of fat .....	.60
2270	ALUMINUM SHIELD, to carry tubes Nos. 2260 and 2262 .....	.90
2272	LANCET, spear point, for pocket	1.25
2274	DROPPER, new construction, for filling the blood tubes .....	.30
2275	CEMENT TUBE, with 50 c.c. graduation, with tip graduated to 1/50 c.c. for cement testing and for use where the proportion of sediment is extremely small	1.80
2275a	METAL SHIELD, for carrying No. 2275 Cement Tube	1.25
2275b	ARM, with two metal tube shields and two 50 c.c. cement tubes for testing cement and for use when the percentage of sediment to be measured is very small	12.00
2275c	ARM, with two metal tube shields and two Goetz tubes for phosphorus determination with graduated tips	16.75
2275d	GRADUATED TUBE. Length 4 1/8 inches, outside diameter 1/8 inch, graduated to 10 c.c. ....	.45
2275e	PLAIN TUBE, Ungraduated. Length of tube 4 1/8 inches, outside diameter 1/8 inch .....	.30
2275f	ALUMINUM SHIELD, for carrying tubes Nos. 2275d and 2275e .....	.30



2275g



2275h

2275g CENTRIFUGE, Electric.

This Centrifuge has been constructed for a medium size laboratory and can be depended upon for continuous service.

It is furnished with a balance wheel to insure stability and has a rheostat for gradually leading up to the maximum speed of 1800 revolutions per minute under load with two 15 c. c. tubes.

Height, $9\frac{1}{2}$ ". Rotating diameter, $11\frac{1}{2}$ ".

The under side of the balance wheel is provided with four fan blades which create a steady air current passing through the windings of the motor, thus preventing overheating.

Weight, packed for shipment, 16 lbs.

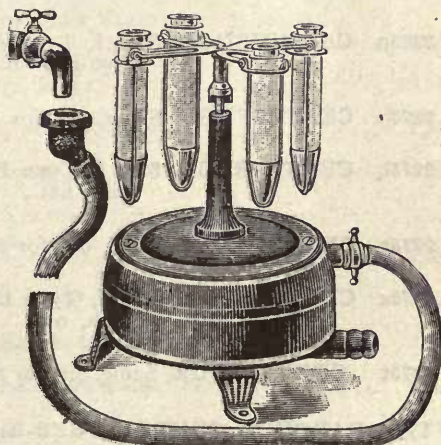
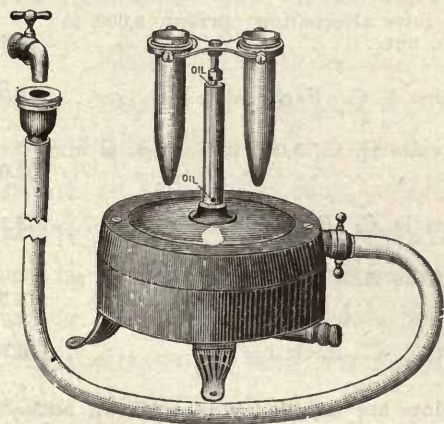
Price, complete with cord and plug.....\$32.50

2275h CENTRIFUGE, Electric—

Many laboratories require a Centrifuge having four tubes and we have therefore provided our No. 19 Centrifuge with a special head for carrying four 15 c. c. tubes. Owing to the construction of the motor the additional tubes do not interfere with the speed to any marked extent. Weight, packed for shipment, 17 pounds.

Price, complete with cord and plug.....\$35.00

When ordering, please specify current on which the centrifuge is to be used.



2275j

2275j CENTRIFUGE, Water Motor—

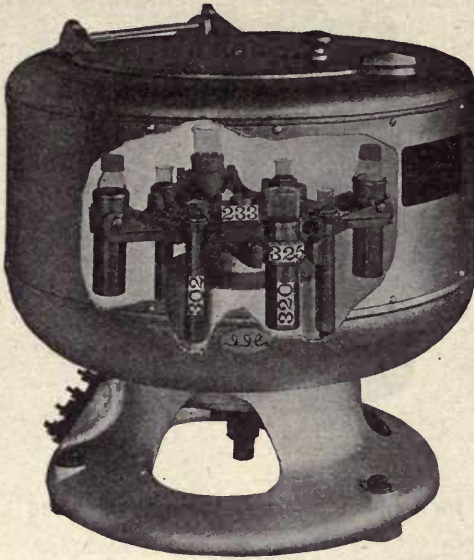
Aluminum shields, four feet pressure tubing and patent hose connection included with each apparatus.

CENTRIFUGE, Single arm, one each plain and graduated 15 c.c. glass tubes....\$12.50

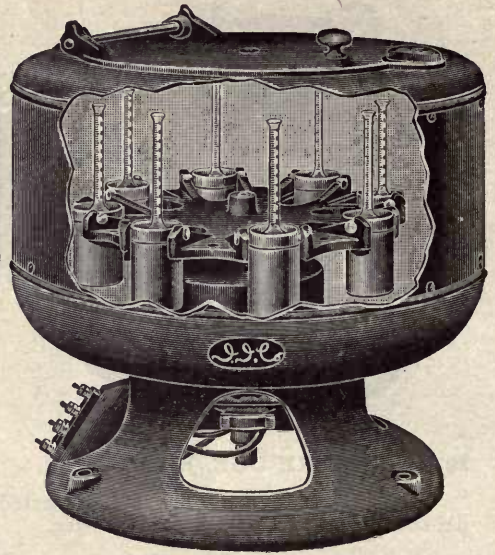
CENTRIFUGE, double arm, two plain and two graduated 15 c.c. glass tubes.... 15.00

CENTRIFUGE, single arm, one each plain and graduated 50 c.c. glass tubes.... 15.00

CENTRIFUGE, double arm, two plain and two graduated 50 c.c. glass tubes.... 20.00



2275k to 2275t



2275u to 2275y

CENTRIFUGES, INTERNATIONAL MAKE

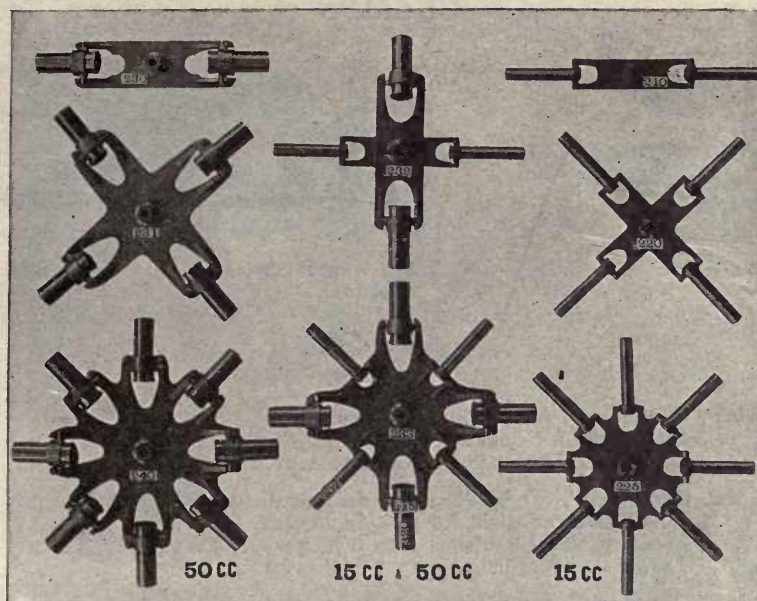
These are High Power Electric Centrifuges mounted in a heavy bell shaped casting which furnishes at the same time a rigid base, a protective housing and a strong bearing for the motor. Ample provision is made for oiling. The lower end of the shaft of the motor runs on a ball step immersed in oil. A speed control rheostat is supplied with each centrifuge.

The prices of the Centrifuges listed below do not include heads or equipment. Select the ones adapted to your needs from the list on the next page.

2275k	CENTRIFUGE, Size I, Type A, 110 volts direct current, 2,400 to 3,000 r. p. m.	
	Each, net	\$ 78.00
2275m	CENTRIFUGE, Same, but for 220 volts, D. C.	Each, net..... 81.50
2275n	CENTRIFUGE, Size I, Type A, 110 volts alternating current, 2,000 to 3,000 r. p. m.	Each, net..... 81.50
2275p	CENTRIFUGE, Same, but for 220 volts A. C.	Each, net..... 85.00
2275q	CENTRIFUGE, Size I, Type B, 110 volts D. C., 3,000 to 4,000 r. p. m.	Each, net
		102.00
2275r	CENTRIFUGE, Same, but for 220 volts D. C.	Each, net..... 105.50
2275s	CENTRIFUGE, Size I, Type B, 110 volts A. C., 3,000 to 3,600 r. p. m.	Each, net
		116.50
2275t	CENTRIFUGE, Same, but for 220 volts A. C.	Each, net..... 116.50

THE BABCOCK CENTRIFUGES listed below are supplied with trunnion buckets, speed control rheostat, but without glassware or heater

2275u	CENTRIFUGE, Babcock, Size I, 110 volts D. C.	Each.....\$ 98.50
2275v	CENTRIFUGE, Babcock, Size I, 220 volts D. C.	Each..... 102.25
2275w	CENTRIFUGE, Babcock, Size I, 110 volts A. C.	Each..... 102.25
2275x	CENTRIFUGE, Babcock, Size I, 220 volts A. C.	Each..... 106.50
2275y	CENTRIFUGE ELECTRIC HEATER for above.	Each..... 14.50



50 c. c. and 15 c. c. Heads and Tubes

EQUIPMENT FOR CENTRIFUGES Nos. 2275(k) to 2275(t)

2275-1	TWO-TUBE, 15 c. c. Head, and metal tubes. Net.....	\$ 3.60
2275-2	FOUR-TUBE, 15 c. c. Head and metal tubes. Net.....	8.40
2275-3	EIGHT-TUBE, 15 c. c. Head, and metal tubes. Net.....	14.50
2275-4	FOUR-TUBE, Combination Head, with two each metal tubes, 15 c. c., and 50 c. c. Net	8.40
2275-5	FOUR-TUBE, 50 c. c. Head, and metal tubes. Net.....	8.40
2275-6	EIGHT-TUBE, Combination Head, with four each metal tubes, 15 c. c., and 50 c. c. Net.....	15.75
2275-7	EIGHT-TUBE, 50 c. c. Head, and metal tubes. Net.....	14.50
2275-8	BOARD OF HEALTH HEAD, without tubes. Net.....	14.50
2275-9	GLASS TUBES, 15 c. c., plain. Per dozen, net, \$1.76; per six dozen, net.	7.00
2275-10	GLASS TUBES, 15 c. c., graduated. Per half dozen, net.....	2.90
2275-11	RUBBER CULTURE CAPS, for 15 c. c. tubes. Per dozen, net.....	1.25
2275-12	BOARD OF HEALTH TUBES, 2 c. c. Per hundred, net.....	5.75
2275-13	RUBBER STOPPERS, for Board of Health tubes. Per hundred, net....	2.25
2275-14	BOARD OF HEALTH TUBES AND STOPPERS. Per set of 20, net..	2.50
2275-15	GLASS TUBES, Lipped, 50 c. c. Per dozen, net, \$1.98; per six dozen, net	7.25

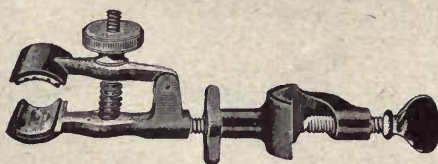
We shall be pleased to quote on other sizes and styles of International Centrifuges.

- 2276 CHAMOIS SKINS, of best quality, according to size.....\$0.25 to \$1.00
 CHLORIDE OF CALCIUM JARS, see Jars.
 CHLORIDE OF CALCIUM TUBES, see Tubes.

CLAMPS



2284-2286



2288-2290-2292

- 2284 CLAMP, Chaddocks', for holding beakers.**
 Small size for beakers Nos. 0 to 2.....\$0.30
 Large size for beakers Nos. 2 to 4..... .30
- 2285 CLAMP, Chaddocks', for holding evaporating dishes.**
 Small size for dishes 3 to 4 inches..... .30
 Medium size for dishes 4 to 6 inches..... .30
 Large size for dishes 6 to 7 inches..... .30
- 2286 CLAMP, Chaddocks', for holding test tubes and necks of flasks..... .30**
- 2288 CLAMP, Burette.** The most popular burette clamp made. Jaws are made of stamped steel, japanned. With checknut to adjust to any angle50
- 2290 CLAMP, Burette.** Same as No. 2288, of polished brass..... 1.00
- 2292 CLAMP, Burette.** Same as No. 2288, of brass, nickel plated..... 1.25

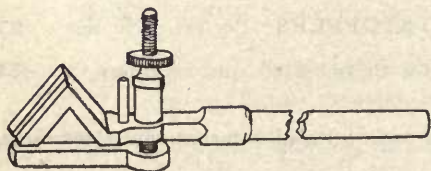


2294

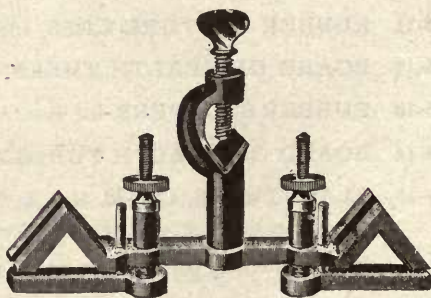


2296

- 2294 CLAMP, Burette, with strong spring, closing the movable jaw.....\$0.75**
- 2296 CLAMP, Burette, small size, universal motion, for holding burettes or tubes in any position75**



2298

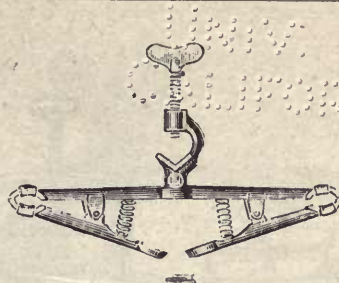


2300

- 2298 CLAMP, Burette, Hofmann's style, small, iron, with universal movement...\$1.50**
- 2300 CLAMP, Burette, Hofmann's Double, for two burettes or other tubes..... 2.50**



2301



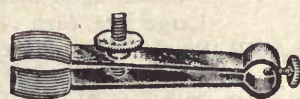
2301a

2301 CLAMP, Burette, for two Burettes, designed by Prof. Lincoln. Will fit any rod up to $\frac{1}{2}$ -inch diameter. Burettes are held perpendicular and are easily removed; very convenient and rigid.....\$0.75

2301a CLAMP, Burette, for two burettes. The jaws are rubber covered, and close by means of coiled springs..... .75



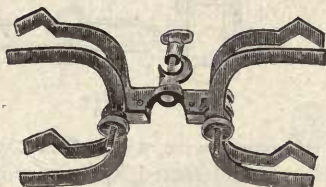
2301b



2301c

2301b CLAMP, Burette. Nickel plated, can be screwed into wall.....\$0.40

2301c CLAMP, Burette. Nickel plated, for attaching to retort stands..... .50



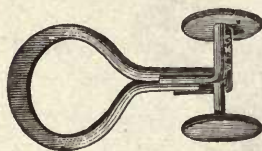
2302



2303

2302 CLAMP, Burette, double, brass, for two burettes.....\$2.00

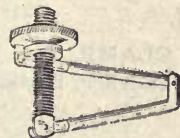
2303 CLAMP, Burette, Allihn's. For two burettes with coiled springs, closing the clamps automatically 3.00



2304



2306



2307

PINCHCOCKS FOR RUBBER TUBING

2304 CLAMP, Pinchcock, Mohr's, for burettes, etc., strong spring.

Size	Small.	Med.	Large.
Each	\$0.10	\$0.15	\$0.20

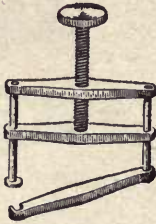
2306 CLAMP, Pinchcock, Screw, Bunsen's, for rubber tubing, with screw on each side\$0.50

2307 CLAMP, Pinchcock, Lever Screw Compressors, nickel plated; in two sizes.

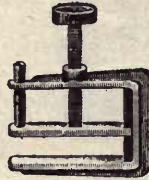
Size	Small.	Large.
Each	\$0.40	\$0.75



2308



2310

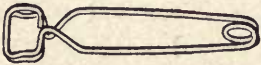


2312

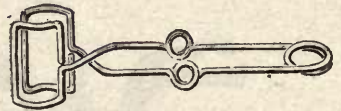


2313

- 2308 CLAMP**, Hoffman's, improved, for rubber tubing, screw can not cut the tubing, nickel plated, a screw compressor. Small size for tubing up to $\frac{1}{2}$ -inch\$0.20
 Large size, for tubing up to $\frac{3}{4}$ -inch..... .25
2310 CLAMP, Pinchcock, screw compressors, of improved construction, can be placed upon tubing without disconnecting apparatus, small..... .25
 Large size, each30
2312 CLAMP, Pinchcock, screw compressors, new style, small, each..... .20
 Large, each25
2313 CLAMP, Tubing, Chaddock's Pinchcocks. One piece of brass spring wire, no solder. A clamp for rubber tubing that can be put on and off the tubing from the side. It allows the tubing to open fully and closes upon it with a lively spring. Nickel finish.
 SizesSmall Medium Large Extra Large
 Each\$0.15 \$0.20 \$0.25 \$0.35



2316

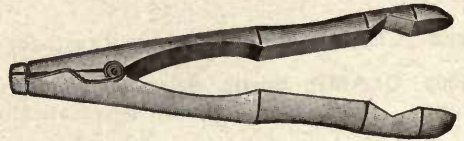


2317

- 2316 CLAMP**, or Test Tube Holder, Stoddard's, of spring wire, $4\frac{1}{2}$ inches long..\$0.15
2317 CLAMP, or Test Tube Holder, of spring wire, nickel plated, with improved finger rests, 5 inches long..... .25

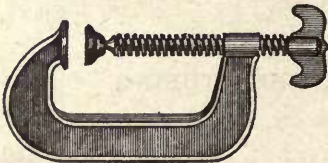


2318

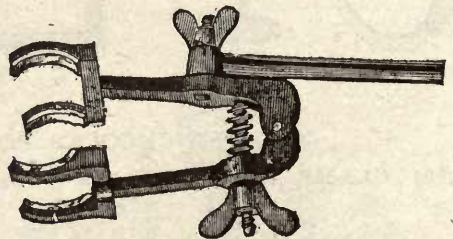


2319

- 2318 CLAMP**, Test Tube, wooden, of improved construction.....\$0.20
2319 CLAMP, Flask, for large tubes and flasks, of wood with spring..... .75



2320

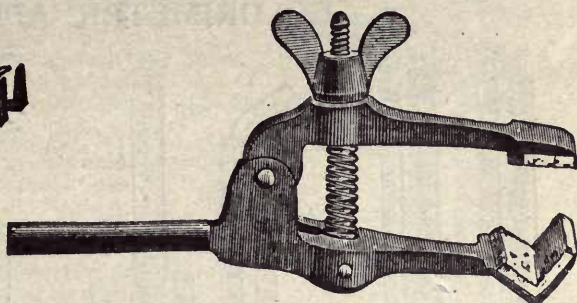


2324-2326

- 2320 CLAMP**, Table of iron, to fasten apparatus to table.
 Size, inches ... 2 $2\frac{1}{2}$ 3 4 5 6 7 8 9 10
 Each\$0.25 \$0.30 \$0.40 \$0.50 \$0.60 \$0.80 \$1.00 \$1.30 \$1.50 \$1.80
2324 CLAMP, Universal, the jaws adapting themselves to irregular shapes.....\$1.00
2326 CLAMP, Universal, large, for very large apparatus, condensers, etc..... 1.25

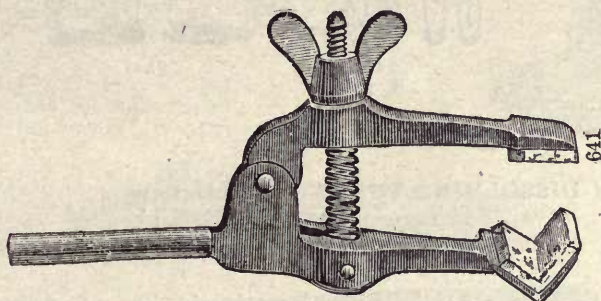


2327



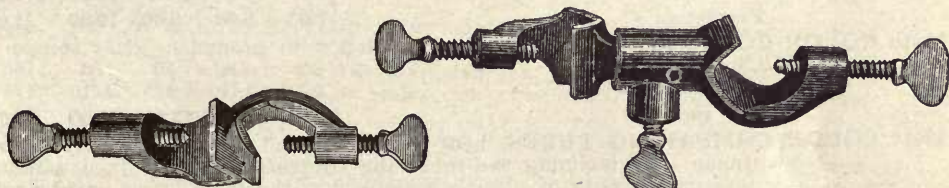
2327a

- 2327 CLAMP, Ostwald's Universal.** Will take tubes up to 2 inches diameter....\$2.00
2327a " **Bunsen's,** for attaching to supports by means of clamp holder.
 The jaws are V shaped and rubber covered..... .50



2328

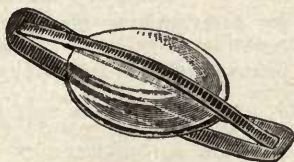
- 2328 CLAMP, Universal motion, large size, very strong for heavy tubes, jaws**
 rubber covered\$0.75



2330-2332

2334

- 2330 CLAMP HOLDER, for fastening clamps to rods of supports, small.....\$0.25**
2332 " " **Large**40
2334 " " **Universal**75



2336



2338

CLAMPS FOR WATCH GLASSES

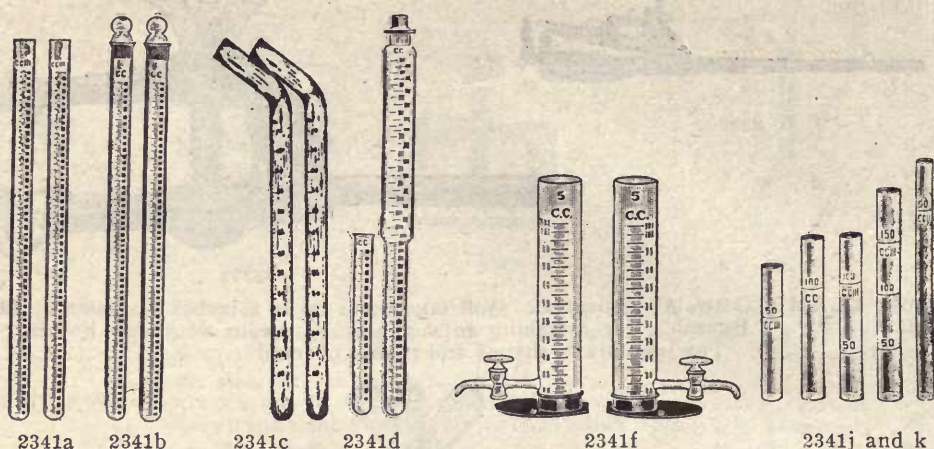
- 2336 CLAMPS, Watch Glass, brass, nickel plated, for two 2-inch glasses.**
2338 " **Watch Glass, Bunsen's form.**
 Diameter, inches 2 2½
 Each\$0.25 \$0.35

CLOTH, Wire, see Gauze, Wire.

COBALT GLASSES, see Plates, Glass.

We are prepared to make on short notice any special Clamps, and Clampholders, which are required for special work. Price upon application.

COLORIMETRIC APPARATUS



CARBON BATH. See Bath.

2341 CARBON DISSOLVING TUBES—Test tube form.

Size, inches	6x $\frac{5}{8}$	8x1	9x $\frac{3}{4}$
Per dozen	\$0.50	\$1.00	\$1.00

2341a COLOR COMPARING TUBES—Eggertz', for the colorimetric estimation of carbon and manganese in steel.

Capacity, c. c.	25	30	50	50	100
Graduated to c. c.	1/10	1/10	1/5	1/10	1/5
Per set of 2	\$3.50	\$4.00	\$4.50	\$5.00	\$ 5.50
Per set of 4	7.00	8.00	9.00	10.00	11.00

2341b COLOR COMPARING TUBES, As above, but with ground in glass stoppers.

Capacity, c. c.	25	30	50	50	100
Graduated to c. c.	1/10	1/10	1/5	1/10	1/5
Per set of 2	\$4.50	\$5.00	\$5.50	\$6.00	\$6.50

2341c COLOR COMPARING TUBES, bent ends, designed by the late Mr. Frank Julian. By inclining the tubes the contents may be mixed without loss or necessity of placing a stopper in the tube, lower portion un-graduated.

Grad. from c. c.	5 to 25	5 to 30	10 to 50	10 to 50	10 to 70
Divided in c. c.	1/10	1/10	1/5	1/10	1/1
Per set of 2	\$3.50	\$4.00	\$4.50	\$5.00	\$5.50
Per set of 4	4.50	5.00	5.50	6.00	6.50

2341d COLOR COMPARING TUBES, Camp's, for determining manganese in steel, designed by Mr. J. M. Camp of Pittsburgh, Pa., per set....\$ 9.00

2341e COLOR COMPARING TUBES; test tube form, graduated to 1/10 c. c.

Capacity, c. c.	10	15
Each	\$0.75	\$0.90

2341f HEHNER'S CYLINDERS. For the estimation of iron in water, consisting of two graduated glass tubes of same size and graduation, with stop-cocks and brass bases.....\$12.00

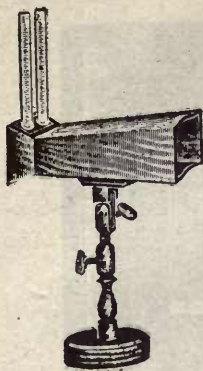
2341h Same, without brass bases..... 7.50

2341j NESSLER'S JARS. For ammonia test, of clear colorless glass with polished bottoms.

Graduated to c. c.	50	100	50 & 100	50-100 & 150
Each	\$0.50	\$0.60	\$0.75	\$1.00

2341k NESSLER'S JARS. Tall form, University of Illinois pattern, of clear colorless glass, with polished bottoms, with lip, 255 mm. high, graduated at 50 c. c.

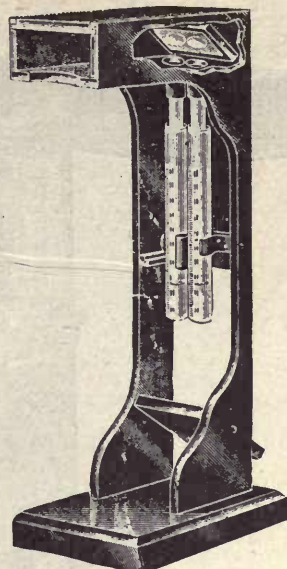
In sets of 12 to agree, per set	\$ 6.00
In sets of 6 to agree, per set	3.00



2345

2345 COLOR COMPARATOR OR CAMERA. Improved form, so constructed that shadows can not be thrown upon the tubes. With blue and ground glass. A superior instrument\$10.00

2345a COLOR COMPARATOR. Designed by Oswald Schreiner, of the Bureau of Soils, U. S. Department of Agriculture. This instrument is used by the United States Government, and eliminates the objectionable features of some other instruments. All working parts coming in contact with the sample or standard, are of glass. Broken parts can at any time be easily replaced.



2345a

The instrument is fully described in the "Journal of the American Chemical Society, Vol. XXVII, Sept. 9, 1905," and "Bulletin No. 31, U. S. Dept. of Agriculture, Bureau of Soils."

Each, net\$20.00
Extra graduated tubes for above, per pair, net.... 4.50
Extra plain tubes for above, per pair, net..... 1.00



2345c

2345b COLOR COMPARATOR. "Lovibond's Tintometer," an instrument by means of which the depth of color in liquids and solids can be accurately measured in degrees, placed in their position in a permanent color scale, and registered for reproduction at any time.

It consists of a graded series of standards made of colored glasses numbered according to their depth of color, and an instrument for holding the glasses and the object to be measured.

Special pamphlet covering the instruments in every detail will be furnished upon request.

No. 3a—Set of Apparatus for Brewers, Maltsters, Sugar and Caramel Manufacturers, Wine and Spirit Merchants, including the improved optical instrument, box with stand and reflector, $\frac{1}{2}$ -inch and $\frac{1}{8}$ -inch silvered cells, filtering apparatus, and 20 standard glasses, series 52 and 50.....\$62.50

Extra apparatus for estimating the color of dry malt, 33 standard glasses, with trays, presser and standard white..... 29.00

No. 6a—Set of Apparatus for Estimating the Color in Oils, Waxes, Lards and other Fats, Varnishes, Gelatine, etc., including the improved optical instrument, fitted with hot water apparatus for melting solids, with thermometer for taking their melting point, case, 1 in., $\frac{1}{2}$ in. and $\frac{1}{4}$ in. silvered cells, without Standard Glasses 67.50

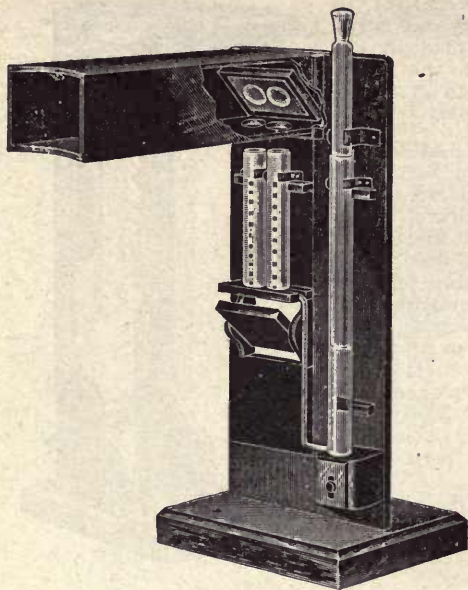
No. 6b—Set for Estimating the Color in Cotton Seed Oil, including the improved optical instrument, fitted with lamp and hot water apparatus for liquifying the oil and maintaining a given temperature, with $5\frac{1}{4}$ in. cell and 36 Standard Glasses.... 95.00

Standard Colored Glasses, each..... .90

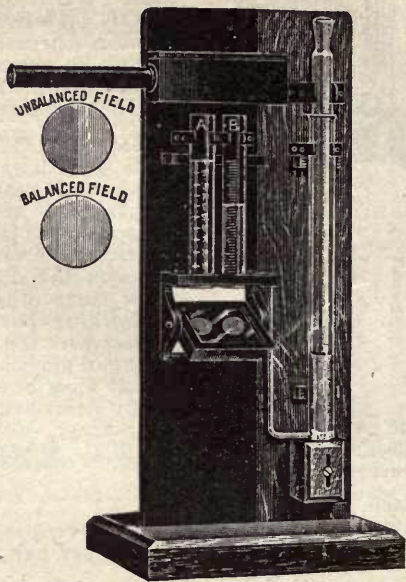
Standard Glasses, if ordered without apparatus and in even numbers, or out of sequence of the fractional intervals in sets. Each 1.35

2345 COLOR COMPARATOR. Lovibond Tintometer. Simple Form, for for estimating the color in cotton seed oil, fitted with standard oil sample bottle and compound standard glass (yellow 35 + red 7.1).

Complete 10.00
Set of 24 Standard Glasses for above..... 24.00



2347



2347a

2347 COLORIMETER, Kennicott-Sargent. It is especially recommended on account of the rapidity of operation while maintaining the highest standard of efficiency possible with the color method. The standard and unknown solutions come in contact with glass only. The apparatus consists of a wooden camera which exhibits on a dark background the pictures of the sample and the standard side by side in the form of two large round discs of color by means of light transmitted through the sample and standard by means of swinging mirrors. The body of the camera is of the correct shape and focal length, enabling the observer to place his face close to the mouth of the instrument whereby all side lights and distracting rays are eliminated. The glass parts consist of a tubular reservoir provided with a glass plunger. From the bottom of a graduated glass chamber there extends a glass tube connected with the bottom of the reservoir, also a corresponding tube for the unknown solution to be tested.

- The complete apparatus as illustrated.....\$20.00
- Extra graduated cylinders, each..... 2.00
- Extra graduated cylinder with leveling system attached 4.00

2347a COLORIMETER, Kennicott-Sargent's, modified by Campbell-Hurley. In this colorimeter the method of comparing the colors is similar to that used in a half shade polariscope, the field consisting of a circular disc of light divided vertically into two parts. The comparison tubes are those of the well-known Kennicott-Sargent instrument in which the unknown is placed in the left hand tube while the color is matched by raising or lowering the level of a standard solution in the right hand tube by means of a glass plunger working in the attached reservoir.

A person looking through the eye piece observes a single field divided vertically by an almost imperceptible line representing the contact point of the hemispheres of the two comparison tubes.

- Complete 20.00
- Prices of separate parts see No. 2347.

HESS-IVES TINT PHOTOMETER



2347b



2347c

The Ives' Tint Photometer is an instrument for comparing different shades and hues of light colored materials or liquids with each other and with fixed standards, in order to differentiate and classify them, and give them numerical expression. It is adapted particularly, and far better than any other existing means or device, to tests of paper-pulps, different hues and grades of white and tinted paper, transparency of waxed and similar papers, color of oils and other liquids, qualities of flour as shown in prepared baked samples, white pigments in oil or turpentine, cottonseed meal, etc., etc.

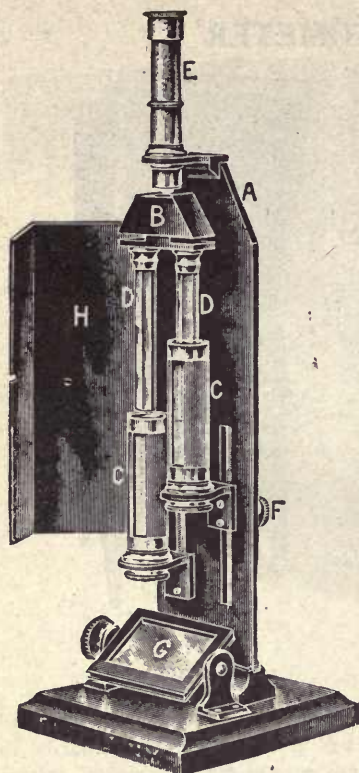
The Ives' Tint Photometer is used like a telescope, presenting to the eye a circular field with vertical hairline central division, one side of which is filled through a slit with light directly from a standard white magnesia block, while the other is filled through another slit with light from the sample to be compared, measured and given numerical expression. The slits are adjustable, with a reading-scale, and the light coming through them is spread evenly across the respective half fields by means of a patent revolving optical mixing-wheel between the slits and the field lens. Especial attention is called to the fact that personal color equation and even a marked degree of color blindness do not affect the readings obtained with the Tint Photometer.

In order to assure definite and constant illumination of standard and sample a "daylight" lamp must be employed.

For other special purposes, such as measuring the transparency of waxed and similar papers and substances, or light colored liquids in long tubes, special fronts are provided, at an additional cost of from \$5 up.

PRICES

2347b	HESS-IVES TINT PHOTOMETER , complete as illustrated.....	\$175.00
2347c	DAYLIGHT LAMP , as shown in 2347e.....	20.00
	(State voltage when ordering.)	
2347d	CABINET , as shown in 2347e.....	60.00
2347e	HESS-IVES TINT PHOTOMETER with daylight lamp and cabinet...	275.00



2348

- 2 Metal screw caps "M," to hold the test tubes.
 2 Glass Test Tubes "N."
 2 Screw Sockets "O," to hold metal cups.
 2 Metal Cups "P."
 1 Source of light "Q" with illuminating lenses.
 "R, R."

Complete \$42.00

2348B Ditto, but adjusted to suit the original "Duboscq" Colorimeter with 10 cm. tubes, of which the glass cylinders move by rack and pinion. Complete.... \$48.00

2348C Colorimeter—Petroleum.

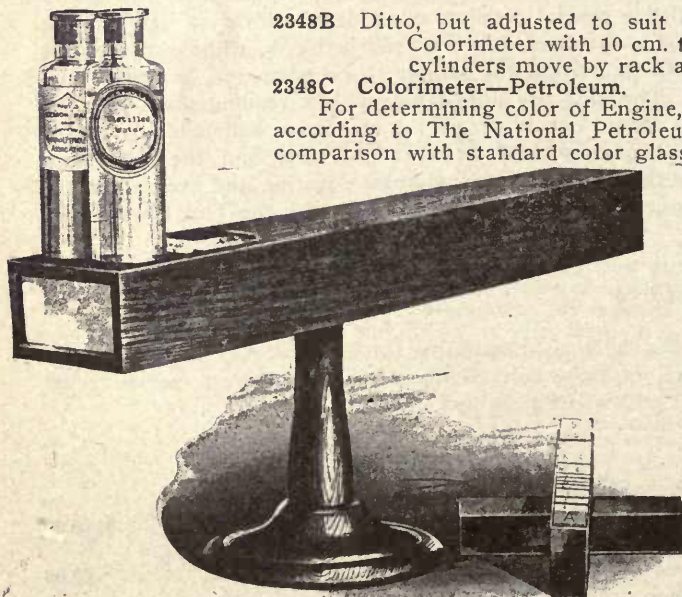
For determining color of Engine, Machinery and Cylinder Oils according to The National Petroleum Association Standards, by comparison with standard color glasses as follows:

- A—Cylinder Oil, Extra Light Filtered
 D—Cylinder Oil, Light Filtered
 E—Cylinder Oil, Medium Filtered
 G—Lily White.... N. P. A. No. 1
 H—Cream White.... N. P. A. No. 1½
 I—Extra Pale.... N. P. A. No. 2
 J—Extra Lemon Pale
 K—Lemon Pale.... N. P. A. No. 3
 L—Extra Orange Pale
 M—Orange Pale.... N. P. A. No. 4
 N—Pale.....
 O—Light Red.... N. P. A. No. 5
 P—Dark Red.... N. P. A. No. 6
 Q—Claret Red.....

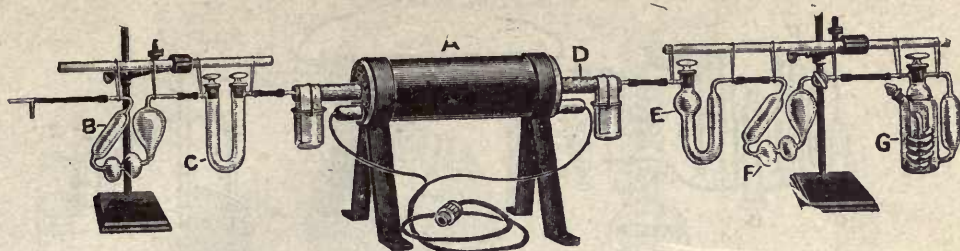
METHOD OF DETERMINING

Lubricating Oils. The color of Lubricating Oils is determined by placing a 4-oz. bottle of oil under examination in one of the circular compartments of the instrument. In the opposite compartment place a 4-oz. bottle of Water White Gasoline or Distilled Water. Then place one of the standard glasses in the slot, and close the slide. The instrument should be taken to a window, where the observer, looking through, can compare the color of the oil with the standard glass.

Filtered Cylinder Oils. To determine the color of Filtered Cylinder Oils they must first be mixed with Water White Gasoline in the proportions of 15% Oil and 85% Gasoline. Then proceed as described for determining color of Neutral Oils.



2348C



2349

2349 COMBUSTION APPARATUS, Vanier's, Electrical, for the direct combustion of carbon in steel, with special glass parts designed by Mr. Geo. P. Vanier of the Pennsylvania Steel Co.

A. The Electrical Furnace, Hoskins Type, for either 110 or 220 volts direct or alternating currents, for temperatures not to exceed 1,000° C. The energy consumed is 6 amperes for 110 volts. The tube chamber is 12 inches long and 1½ inches in diameter. Other sizes can be supplied to order.

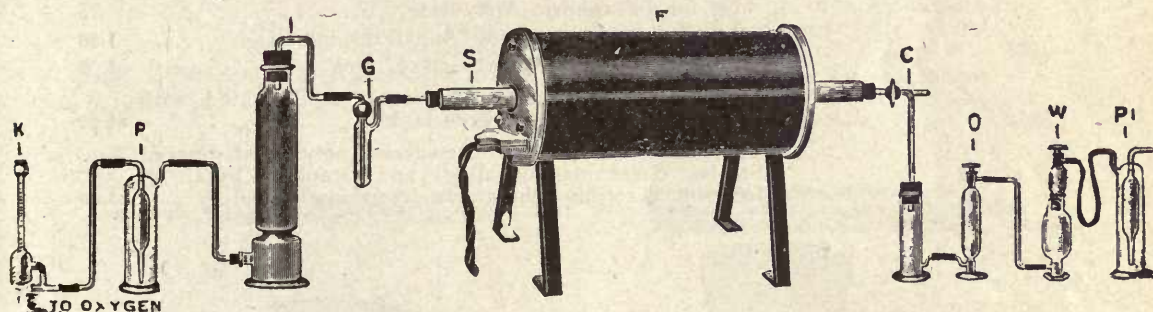
Complete with a six foot connection cord and with plug for ordinary Edison lamp socket.....\$25.00

IN ORDERING, STATE VOLTAGE DESIRED

Rheostat for above..... 8.50

Repair Parts for furnace:

Alundum tube	2.10
Alundum tube, wound with wire.....	7.00
B. Ordinary Potash Bulb.....	.75
C. Glass Stoppered Calc. Chloride Tube, 4 inches long.....	2.00
D. Quartz Combustion Tube, 24x¾ inch.....	5.00
E. Special Zinc Tube.....	.75
F. Vanier's Sulphuric Acid Bulb.....	1.25
G. Vanier's Combined Potash Bulb and Drying Tube (Patented)	10.00
H. The complete Combustion Apparatus, as illustrated, with furnace and Rheostat, supports, clamps, rods, beakers, tubing, etc., but without oxygen tank.....	50.00



2349-1

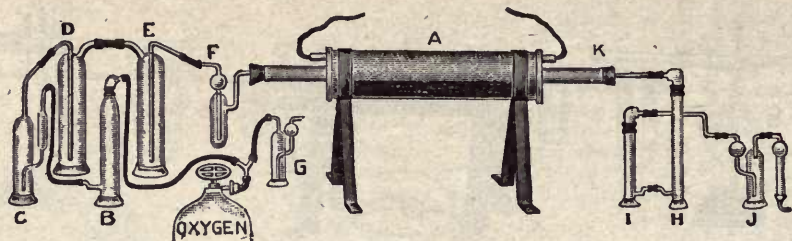
2349-1 COMBUSTION APPARATUS, Fleming, complete as illustrated, with Hoskins Type FD 302 Electric Combustion Furnace, rubber stoppers, glass and rubber connections; without oxygen tank and pressure gauge.....\$25.00

Rheostat for regulating temperature of furnace..... 8.50

When ordering state voltage of current available.

Separate Parts:

K. Mercury Pressure Gauge.....	1.75
P. Washing Bottle	1.25
T. Calcium Chloride Jar.....	1.25
G. Mercury Valve .....	.75
S. Silica Tube 30 inches long, 7/8 inch inside diameter.....	5.75
F. Hoskins' Electric Combustion Furnace, Type FD-302...	25.00
Z. Zinc Jar .....	.75
C. Stopcock	1.50
O. Phosphoric Anhydride Jar.....	2.50
W. Fleming Absorption Tube.....	5.00
P1. Washing Bottle	1.25



2349-2

2349-2 COMBUSTION APPARATUS, Johnson's, Electrical, for the determination of carbon in iron, steel, ferro alloys and plumbago. Designed by Mr. C. M. Johnson of the Park Steel Works of the Crucible Steel Co. of America.

- A. The Electrical Furnace, Hoskins' Type F. D. 302,** for either 110 or 220 volts direct or alternating current, for temperatures not to exceed 1000° C. The energy consumed is 6 amperes for 110 volts. The tube chamber is 12 inches long and $1\frac{1}{4}$ inch in diameter. Complete, with a six foot connecting cord and with plug for ordinary Edison lamp socket **\$25.00**

IN ORDERING, STATE VOLTAGE AVAILABLE

Rheostat for above **8.50**

Repair parts for furnace:

- | | |
|---|-------------|
| Alundum tube | 2.10 |
| Alundum tube, wound with wire..... | 7.00 |
| B. Jar, for Potassium Hydroxide, stick form, or for any solid dryer or absorbent..... | 1.00 |
| C. Jar for Potassium Hydroxide Solution..... | 1.50 |
| D. Calcium Chloride Jar | 2.00 |
| E. Soda Lime Jar..... | 2.00 |
| F. Mercury Safety Valve | .75 |
| G. Mercury Pressure Indicator, for detection of leaks.... | 1.00 |
| H. Jar for Granular Zinc..... | .80 |
| I. Jar for Phosphoric Anhydride..... | .75 |
| J. Absorbing and weighing Apparatus for CO_2..... | 1.50 |
| K. Quartz Combustion Tube, $24 \times \frac{3}{4}$ inch..... | 5.00 |
| The complete Combustion Apparatus, as illustrated, with Rheostat, but without oxygen tank..... | 55.00 |
| "Rapid Methods for the Chemical Analysis of Special Steels. Steel making alloys and Graphite" by C. M. Johnson, describing the above determination..... | 3.00 |



2351



2351a

2351 COMBUSTION CAPSULES, porcelain.

Diameter, mm.....	40	50
Height, mm.....	22	30
Each	\$0.20	\$0.25

2351a COMBUSTION CAPSULES, Fused Silica, especially adapted for ash determinations, ignitions, etc.

Diameter, inches	$1\frac{3}{8}$	$1\frac{3}{4}$	2	$2\frac{3}{8}$
Each	\$0.60	\$0.60	\$0.90	\$1.00

COMBUSTION BOATS, see Boats.

COMBUSTION Furnaces, see Furnaces.

COMBUSTION Tubes, see Tubes.

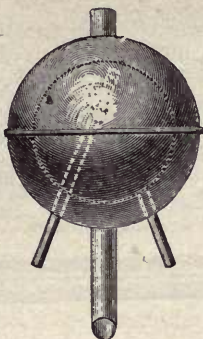
CONDENSERS



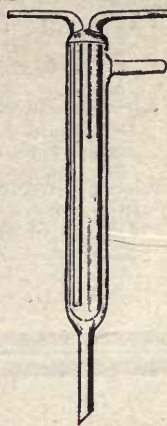
2352



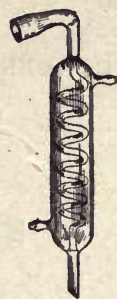
2353



2356



2358



2360

In ordering glass condensers please state whether the side tubes are desired both on one side, or on opposite sides of the water jacket.

2352 CONDENSER, Allihn's, all glass.

Size, inches	8	10	12	15	20	25
Each	\$1.20	\$1.35	\$1.50	\$1.75	\$2.25	\$2.75

2353 CONDENSER, Hallock's, of copper with block tin coil, 14½ inches long, 4 inches diameter, with 2 rods for attaching to support...\$7.50

2356 CONDENSER, Ball form, copper nickel plated, each..... 5.00

2358 CONDENSER, Hopkins'. After design by Prof. C. G. Hopkins. Made entirely of glass, and consists of a thin glass water tube, 25 mm. outside diameter and 250 mm. long, provided with inlet and outlet tubes, the former reaching to near the bottom of the water tube. The water tube is sealed into a stronger outer tube having side neck and its lower end ground to point. In use the outer tube is not cooled to a temperature at which atmospheric moisture will condense upon it, wherein lies the chief advantage of this condenser over ordinary forms in fat extraction with anhydrous ether. May also be used for ordinary distillation by passing the vapor through the side tube. Total length, 350 mm. Each 2.50

2360 CONDENSER, Kennicott's, all glass, specially designed for water analysis and adapted for use with a 32 oz. retort. Used by Chicago Health Department 3.00



2362



2364

2362 CONDENSER, Liebig's, of glass, with rubber connection, with adapter sealed on to condensing tube if desired.

Length of glass body, inches. 10 12 15 20 24 30						
Each	\$0.85	\$1.00	\$1.10	\$1.25	\$1.90	\$2.00

2364 CONDENSER, Liebig's, made entirely of glass, with the condensing tube sealed in the glass jacket.

Length of glass body, inches..... 8 10 12 15 20						
Each	\$0.70	\$0.90	\$1.10	\$1.25	\$1.90	

Our Glass Blowing Department is equipped to make special types of all Glass (plain, spiral and Bulb) condensers, as well as all types of distillation and extraction tubes and flasks. Also all apparatus requiring graduations, grindings, etc.

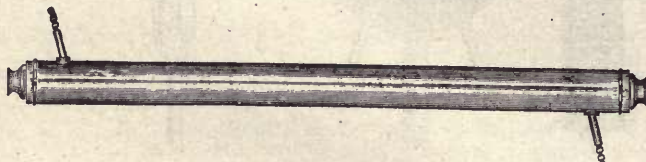


2365



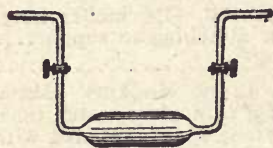
2366

- 2365 CONDENSER**, Liebig's, but with adapter fused to condenser tube.
 Length of jacket, inches..... 10 12 15 20
 Each\$1.10 1.30 1.50 2.20
- 2366 CONDENSER**, Liebig's, made entirely of glass, but with the condensing tube in the form of a coil sealed into the water jacket.
 Length of glass body, inches. 8 10 12 15 20 25
 Each\$2.00 2.25 2.50 3.00 3.75 4.50



2367

- 2367 CONDENSER**, Brass Jacket, fitted with glass condensing tube and rubber stopper.
 Length of jacket, inches..... 15 20 27 30
 Each\$3.75 4.25 4.75 5.50

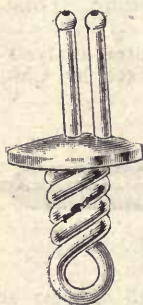


2372

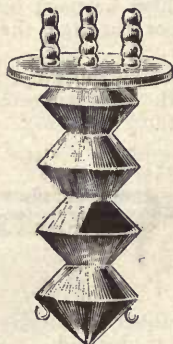


2376

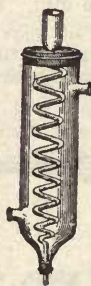
- 2372 CONDENSER**, Sulphurous acid, with two stopcocks in vertical limbs, each \$4.50
- 2376 CONDENSER**, Sulphurous acid, with two stopcocks in horizontal limbs, each 4..50



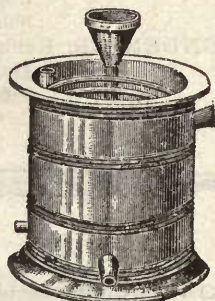
2377



2377a



2378



2380

- 2377 CONDENSER** for Extraction Apparatus, Underwriters' Laboratories type. For the determination of extractable constituents of rubber insulation on wire, etc.

- 2377a CONDENSER**, Wiley's, of copper, nickel plated, well tinned inside.

- 2378 CONDENSER**, Worm Condenser inside a cylindrical glass water jacket.
 Size Pint. Quart. ½ Gal.
 Each\$2.50 3.50 5.00

- 2380 CONDENSER**, Worm Condenser, heavy block tin worm inside a zinc water jacket.
 Capacity of still, gallons..... ½ 1 2 3 5
 Each\$3.00 4.00 4.50 5.00 6.00

CONDENSER TUBES, see Tubes.



2384

CONES of Platinum, see under Platinum.

2384 CORKS, XX quality, regular length.

No.	1	2	3	4	5	6	7	8	9	10	11	12
Dia. large end, in....	$\frac{1}{8}$	$\frac{1}{2}$	$\frac{1}{8}$	$\frac{5}{8}$	$\frac{11}{8}$	$\frac{3}{4}$	$\frac{11}{8}$	$\frac{7}{8}$	$\frac{11}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{8}$
Per gross	\$0.20	.20	.25	.30	.40	.45	.55	.70	.80	1.00	1.10	1.20
No.	13	14	15	16	17	18	19	20	22	24	26	
Dia. large end, in...	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{8}$	$1\frac{3}{8}$	$1\frac{1}{8}$	$1\frac{1}{2}$	$1\frac{1}{8}$	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	2	
Per gross	\$1.30	1.40	1.60	1.90	2.20	2.50	2.70	3.00	3.50	4.20	4.50	

2386 CORKS, XXX quality, regular length, cut from selected wood.

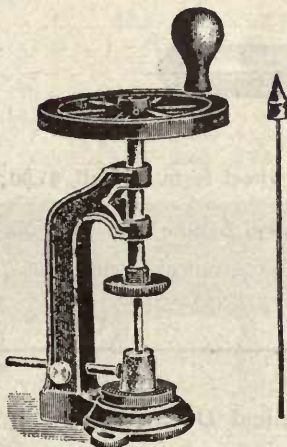
No.	1	2	3	4	5	6	7	8	9	10		
Dia. large end, inches...	$\frac{1}{8}$	$\frac{1}{2}$	$\frac{1}{8}$	$\frac{5}{8}$	$\frac{11}{8}$	$\frac{3}{4}$	$\frac{11}{8}$	$\frac{7}{8}$	$\frac{11}{8}$	1		
Per gross	\$0.35	.38	.40	.45	.60	.70	.85	1.00	1.20	1.50		
No.	11	12	13	14	15	16	17	18	19	20		
Diam. large end, inches..	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{8}$	$1\frac{3}{8}$	$1\frac{1}{8}$	$1\frac{1}{2}$	$1\frac{1}{8}$	$1\frac{5}{8}$		
Per gross	\$1.60	1.70	1.90	2.10	2.40	3.00	3.40	3.70	4.00	4.60		

2388 CORKS, XX quality, short length, for wide mouth bottles, diameter same as above.

No.	1	2	3	4	5	6	7	8	9	10	11	12
Per gross	\$0.18	.18	.20	.24	.30	.35	.45	.50	.60	.80	.90	1.00
No.	13	14	15	16	17	18	19	20	22	24	26	
Per gross	\$1.15	1.25	1.40	1.50	1.70	1.90	2.00	2.30	2.70	3.00	3.80	

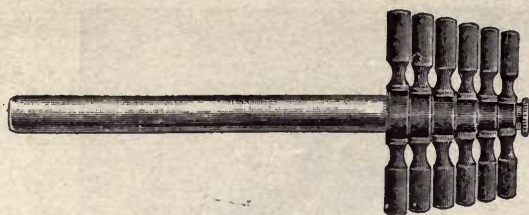
2392 CORKS, Flat, so-called specie corks, $\frac{1}{2}$ to $\frac{3}{4}$ -inch long.

Diameter, large end, inches...	2	$2\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{3}{8}$	$2\frac{1}{2}$	$2\frac{5}{8}$	$2\frac{3}{4}$	$2\frac{7}{8}$	3		
Per dozen	\$0.15	.18	.20	.25	.25	.30	.30	.35	.40		
Diameter, large end, inches.....	$3\frac{1}{4}$	$3\frac{1}{2}$	$3\frac{3}{4}$	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6			
Per dozen	\$0.50	.60	.70	.90	1.20	1.50	1.80	2.25			



2393

2393 CORK BORING MACHINE. For attaching to table. For boring holes of various sizes in corks and rubber stoppers. Complete with set of eight borers and special device for holding same when not in use.....\$15.00



2395

2395 CORK BORERS. Of hard drawn brass tubing, nicely finished, each borer is supplied with a handle.

In sets of	3	6	9	12	15
Sizes from	1 to 3	1 to 6	1 to 9	1 to 12	1 to 15
Per set	\$1.00	2.00	3.00	4.50	6.00



2396

2396 CORK BORERS, of polished brass, mandrel-drawn tubing.

In sets of	1 to 3	1 to 6	1 to 9	1 to 12	1 to 15
Per set	\$0.90	1.75	2.75	4.25	5.75



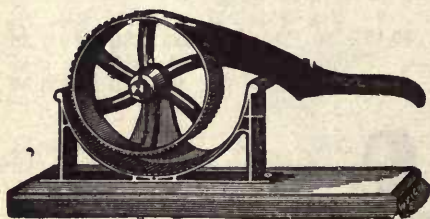
2398



2400

2398 CORK BORER SHARPENER, a metal cone with a steel knife.....\$1.50
CORK FILES, see Files.

2400 CORK KNIFE25



2404



2408

2404 CORK PRESS, improved wheel form. Small, \$1.00; large.....\$1.50

2408 CORKSCREW, with wooden handle25

COVER GLASSES for Microscopical Preparations, see Glass Covers.

Our Industrial Chemical Department is in a position to furnish **HEAVY CHEMICALS** in quantities from 1 oz. to Carloads. We specialize in Caustic Soda, Soda Ash, Caustic Potash, Benzol, Toluol and Coal Tar Products.

CRUCIBLES



2412

2412 CRUCIBLES, Annealing Cups, for gold.

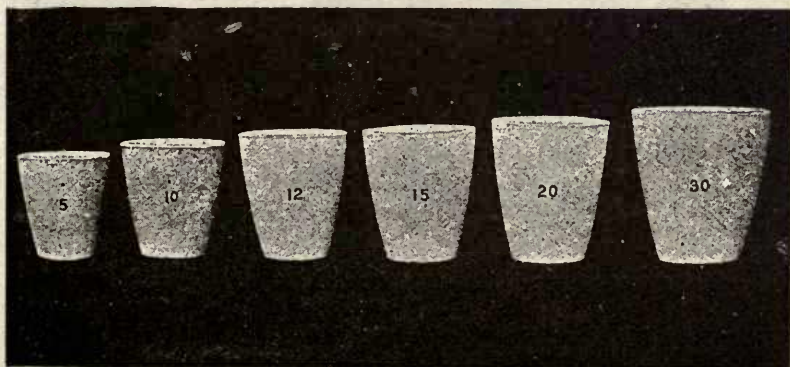
No.	0	1	2
Size, inches	$1\frac{1}{8} \times 1\frac{1}{8}$	$1\frac{1}{4} \times 1\frac{1}{4}$	$1\frac{1}{2} \times 1\frac{1}{2}$
Per dozen	\$1.25	\$1.50	\$1.80
Covers, dozen .....	.30	.40	.50



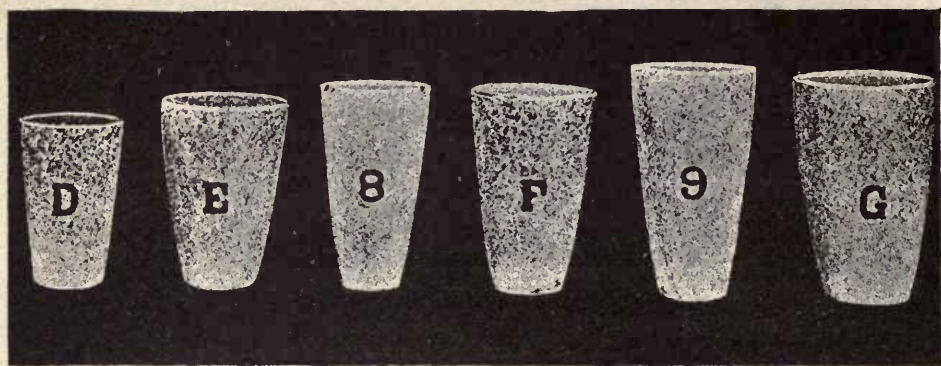
2420

2420 CRUCIBLES, Black Lead, genuine Dixon's.

No.	0	2-0	3-0	4-0	1	2	3	4	5	6
Height, in.....	2	$2\frac{3}{8}$	$2\frac{1}{2}$	3	$3\frac{5}{8}$	$4\frac{1}{2}$	$5\frac{1}{4}$	$5\frac{3}{8}$	6	$6\frac{1}{2}$
Diam., in.....	$1\frac{1}{2}$	$1\frac{7}{8}$	$1\frac{1}{8}$	$2\frac{3}{8}$	$3\frac{1}{8}$	$3\frac{3}{4}$	$4\frac{1}{4}$	$4\frac{5}{8}$	$4\frac{7}{8}$	$5\frac{1}{4}$
Each	\$0.60	.60	.60	.75	.90	1.05	1.20	1.35	1.65	1.80
Covers, each.....	..	..	..	..	.40	.40	.40	.40	.40	.60
No.	7	8	10	12	14	16	18	20	25	30
Height, in.....	$6\frac{3}{4}$	$7\frac{1}{4}$	8	8	$8\frac{1}{2}$	$8\frac{3}{4}$	$9\frac{3}{4}$	$10\frac{1}{4}$	$10\frac{3}{4}$	11
Diam., in.....	$5\frac{1}{2}$	$5\frac{3}{4}$	6	$6\frac{1}{4}$	$6\frac{3}{4}$	7	$7\frac{3}{8}$	$7\frac{3}{4}$	8	$8\frac{5}{8}$
Each	\$1.95	2.10	2.40	2.50	3.00	3.40	3.75	4.20	5.25	6.25
Covers, each....	.75	.75	.75	.75	.75	.75	.90	1.20	1.50	1.50
No.	45	40	45	50	60	70	80	90	100	
Height, in.....	$11\frac{5}{8}$	$12\frac{3}{8}$	13	$13\frac{1}{2}$	14	$14\frac{1}{2}$	$15\frac{3}{8}$	$15\frac{7}{8}$	16	
Diam., in.....	$9\frac{1}{4}$	$9\frac{1}{4}$	$9\frac{3}{4}$	$10\frac{1}{8}$	$10\frac{3}{8}$	$10\frac{7}{8}$	$11\frac{1}{8}$	$11\frac{1}{2}$	$11\frac{7}{8}$	
Each	\$7.40	8.40	9.45	10.50	12.50	13.70	16.80	18.90	21.00	
Covers, each...	2.00	2.40	2.70	3.00	3.50	4.20	4.75	5.40	6.00	



2421



2424-2428

2421 CRUCIBLES, Clay. These crucibles are made in both hard and soft burn.

Capacity, grm.....	5	10	12	15	20	30	35	40
Height, inches.....	2 $\frac{5}{8}$	3	3 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	3 $\frac{7}{8}$	4 $\frac{3}{4}$	5 $\frac{5}{8}$
Dia. at top, inches..	2 $\frac{3}{8}$	2 $\frac{5}{8}$	2 $\frac{3}{4}$	2 $\frac{7}{8}$	3	3 $\frac{1}{2}$	3 $\frac{3}{4}$	3 $\frac{5}{8}$
Per 100.....	\$2.50	3.00	3.00	3.00	4.00	6.00	6.00	8.00

Covers for above.

Per 100.....	\$2.25	2.25	2.25	2.25	3.50	4.00	4.00	5.00
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2424 CRUCIBLES, American made. High form; for gasoline or open furnace work.

Number ...	D or 6	E	F	G	I	J	K	L	N	O	Q
Height, in..	4 4 $\frac{1}{2}$	5	5 $\frac{5}{8}$	6	6 $\frac{5}{8}$	7 $\frac{1}{4}$	8	9 $\frac{1}{4}$	10	13	
Dia. at top..	2 $\frac{1}{4}$	3	3 $\frac{3}{8}$	3 $\frac{3}{8}$	4	4 $\frac{3}{8}$	4 $\frac{5}{8}$	5 $\frac{1}{4}$	6 $\frac{1}{2}$	7 $\frac{1}{8}$	9
Per 100....	\$3.50	5.50	6.00	8.00	10.00	12.00	15.00	30.00	50.00	60.00	150.00

Covers for above.

Per 100	\$2.25	3.50	4.00	5.00	5.50	6.00	8.75	8.75
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2428 Dixon's Assay (Sand) Crucibles

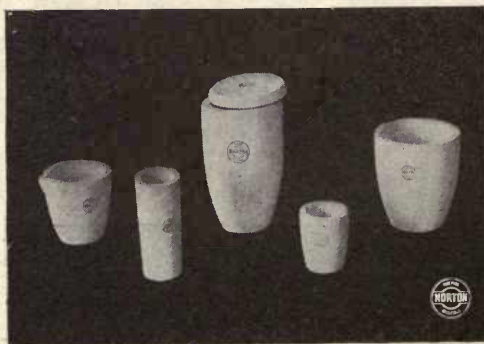
No.	Height Inches	Diam. Inches	Per 100	Per Doz.	Each
A	2 $\frac{5}{8}$	1 $\frac{5}{8}$	\$ 2.75	\$ 0.40	\$0.10
B	3	1 $\frac{7}{8}$	3.25	.50	.10
C	3 $\frac{1}{2}$	2 $\frac{1}{4}$	3.50	.60	.10
D	4	2 $\frac{3}{8}$	4.00	.70	.10
E	4 $\frac{1}{2}$	2 $\frac{7}{8}$	6.00	.80	.10
F	5	3	6.50	.90	.10
G	5 $\frac{5}{8}$	3 $\frac{3}{8}$	8.50	1.35	.15
H	5 $\frac{7}{8}$	3 $\frac{7}{8}$	15.00	2.00	.20
I	6 $\frac{5}{8}$	4 $\frac{3}{8}$	20.00	2.50	.25
J	7 $\frac{1}{4}$	4 $\frac{3}{4}$	22.00	3.00	.30
K	8	5 $\frac{1}{4}$	32.00	4.20	.40
L	8 $\frac{1}{2}$	5 $\frac{3}{4}$	40.00	5.40	.50
M	9 $\frac{3}{8}$	6 $\frac{1}{2}$	55.00	7.20	.65
N	10	7	80.00	10.20	.90
O	11	7 $\frac{5}{8}$	110.00	14.20	1.25
P	12	8 $\frac{3}{4}$	175.00	22.00	2.00

F. O. B. New York

**Covers for
Dixon's Assay (Sand) Crucibles**

Size	Per 100	Per Doz.	Each
A	\$ 2.50	\$0.50	\$0.05
B	3.00	.50	.05
C	3.25	.50	.05
D	3.50	.50	.05
E	4.00	.60	.08
F	5.00	.70	.10
G	6.00	.80	.10
H	7.00	1.00	.12
I	7.50	1.10	.12
J	10.00	1.40	.15
K	10.50	1.50	.16
L	11.00	1.80	.18
M	12.00	2.20	.20
N	13.00	2.50	.25
O	14.00	2.70	.30
P	15.00	3.00	.35

F. O. B. New York



2429

2429 CRUCIBLES, Alundum Melting, most refractory, well adapted to experimental electric furnace work; however, not suitable for use where slags are encountered, on account of their absorbent nature.

No.	5922	6820	5144	5923	6608
Diameter, inches	1 $\frac{1}{2}$	2 $\frac{3}{8}$	3	1 $\frac{3}{8}$	2 $\frac{3}{4}$
Height, inches	2	2 $\frac{5}{8}$	3 $\frac{5}{8}$	3 $\frac{3}{4}$	4 $\frac{3}{4}$
Each	\$0.75	1.00	1.25	1.50	2.00

2429a CRUCIBLES, Hessian Sand, triangular, in nests.

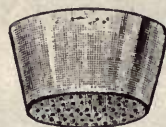
No. in Nest.....	3	5
Height of largest, inches.....	4	4 $\frac{1}{2}$
Width on top, inches.....	3	3 $\frac{3}{4}$
Nest	\$0.30	\$0.50



2429a



2452



2453

2452 CRUCIBLES, Rose's, of unglazed porcelain, with perforated cover and delivery tube.

	— Complete —		
Capacity, cc.	15	30	60
Each	\$1.00	1.25	1.50

2452a COVERS only of No. 2452.

For crucible of capacity, cc.	15	30	60
Each	\$0.10	.15	.20

2452b CRUCIBLES only of No. 2452.

Capacity, cc.	15	30	60
Each	\$0.20	.30	.40

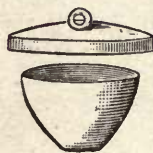
2452c DELIVERY TUBE only, with flange, of No. 2452.

For crucible of capacity, cc.	15	30	60
Each	\$0.70	.80	.90

2453 CRUCIBLES, Gooch, for Bitumen in Asphalt, Coors Porcelain, with large filtering surface. Height, 24 mm.; width at top, 45 mm.; width at bottom, 35 mm. \$0.50



2455



2457

2455 CRUCIBLES, Coors Porcelain, high form, glazed throughout, without covers.

No.	000	00	0	1	2	3	4	5
Capacity, cc.	5	10	15	30	57	95	155	280
Diameter at top, mm..	26	30	35	41	52	62	72	87
Height, mm.	19	25	27	35	43	50	59	72
Each	\$0.09	.12	.15	.24	.30	.35	.45	.55

2455a COVERS for Crucibles No. 2455.

No.	000	00	0	1	2	3	4	5
Diameter, mm.	32	35	42	47	59	73	81	95
Each	\$0.05	.05	.05	.07	.09	.12	.12	.15

2457 CRUCIBLES, Coors Porcelain, wide form, glazed throughout, without covers.

No.	000	00	0	1	2	3	4	5
Capacity, cc.	8	12	17	30	50	90	145	265
Diameter at top, mm..	32	37	41	46	56	67	81	96
Height, mm.	19	21	25	29	36	44	52	65
Each	\$0.12	.15	.18	.25	.34	.43	.50	.62

2457a COVERS for Crucibles No. 2457.

No.	000	00	0	1	2	3	4	5
Diameter, mm.	39	44	47	52	65	76	88	107
Each	\$0.05	.05	.07	.07	.08	.12	.15	.18



2459



2459b

2459 CRUCIBLES, Alundum, for high temperature work, especially suited to coal analysis drying of materials, igniting of filters and other general laboratory work.

No.	5202	5203	7040
Diameter, inches	1½	1¾	1¾
Height, inches	1½	1¾	1¾
Capacity, cc.	20	40	25
Each	\$0.30	.35	.35

2459a CRUCIBLES, Covers for above.

Each	\$0.30	.35	.35
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2459b CRUCIBLES, Alundum, Porous, for filtering, especially adapted to routine laboratory work where suction is available, because of the rapidity with which filtrations can be made. They will hold the finest precipitates and may be cleansed by heating over a Bunsen burner.

No.	5204	5205
Diameter, inches	1¾	1¾
Height, inches	1½	1½
Capacity, cc.	25	35
Each	\$0.30	.35

Above are supplied in three degrees of porosity, RA84 dense; RA360 medium; RA98 porous. If no degree of porosity is specified, RA98 will be sent.



2459c



2459a

2459c CRUCIBLES, Fused Silica, low form, unaffected by sudden and extreme changes of temperature, not attacked by acids except hydrofluoric.

No.	0	1	2	3
Diameter, about mm.....	41	47	57	67
Height, about mm.....	25	28	37	45
Each	\$0.60	.75	.90	1.25

2459d CRUCIBLE COVERS, Fused Silica, for above.

Each	\$0.50	.60	.75	.90
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2459e CRUCIBLES, Fused Silica, tall style, shape of platinum crucibles.

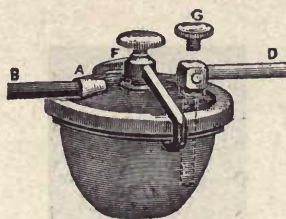
No.	4	5	6
Diameter, about mm.....	50	35	43
Height, about mm.....	50	35	38
Each	\$1.25	\$1.25	\$1.25

2459f CRUCIBLE COVERS, Fused Silica, for above.

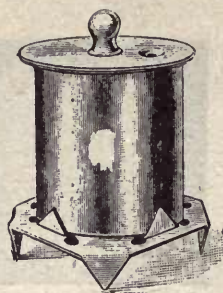
Each	\$0.60	.60	.60
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2460 CRUCIBLES, Silver, pure silver, with covers.

Capacity, cc.	20	30	50	75	100	150
Approx. weight, grams.....	35	45	60	80	100	150
Each	\$3.25	3.75	5.25	7.00	8.50	12.00



2462



2465

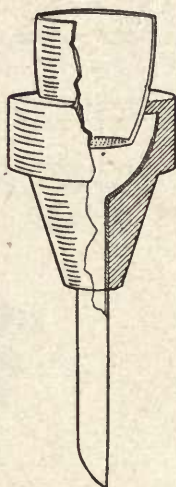
- 2462 CRUCIBLES,** Skidmore's Crucible and Retort combined. This is a new design of spun iron crucible for the individual use of the laboratory student or for general experimenting. It may be used equally well as an open crucible, a closed crucible, or a retort; and being of thin metal, is easily brought to a red heat in the flame of an ordinary burner. Each.....\$1.50
- 2462(a) CRUCIBLES,** Extra bowls for same, each......50
- 2464 CRUCIBLES,** Large 2.50
- 2465 CRUCIBLES,** Pennock and Martin's, made of pure sheet nickel, with lid perforated with small hole for insertion of igniting wire, for the rapid and accurate determination of sulphur in coke and coal. Capacity 40 cc., size 1½ inches diameter, 1¾ inches high 3.50



2465a



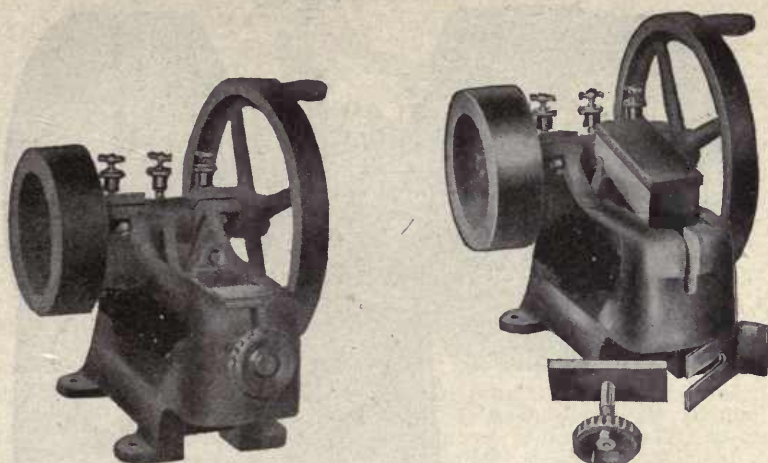
2465b



2465c

- 2465a CRUCIBLE HOLDER,** Sargent's, for filtering crucibles. The simplest apparatus for the purpose on the market. It is of special value where the unobstructed use of the entire sides and bottoms of porous filters is desired, as it grasps only about one-eighth of an inch of the upper rim of the crucible. Can be instantly installed or removed for cleaning. Will fit any ordinary sixty degree funnel. Can be used with any crucible on the market, such as Gooch, Caldwell or porous Alundum styles. Made of one piece of soft rubber in three sizes only.
- | | | | |
|----------------------------------|--------|-----|-----|
| Size No. | 1 | 2 | 3 |
| For crucibles, top diam. mm..... | 27 | 35 | 40 |
| Each | \$0.30 | .35 | .40 |
- 2465b CRUCIBLE HOLDER,** Sargent's, replaceable flange type. Has all the good points of No. 2465(a) and in addition has the advantage of greater ease of manipulation as well as provision for the easy replacement of the soft flanges when desired. Made of hard rubber with pure gum flanges. Can be made to order in any size.
- | | | | |
|--------------------------------------|--------|------|------|
| Size No. | 1 | 2 | 3 |
| For Crucibles, top diameter, mm..... | 27 | 35 | 40 |
| Each | \$1.50 | 1.50 | 1.50 |
- 2465c CRUCIBLE HOLDER,** Celeritas. For quick and easy manipulation this Gooch Crucible Holder cannot be equalled. Hot acid solutions can be filtered without danger of contamination, as the rubber plug is completely lined inside with a bell-shaped glass covering. The taper of the plug is so designed as to fit flasks of various sized necks. One complete holder will take the place of the usual carbon tube, rubber stopper and tubing. Each, complete, but without crucible.....\$0.50

CRUSHERS



Ready for use.

Opened for cleaning.

2466

NO. 1 OR SMALL CASE CRUSHER, HAND AND POWER

2466 CRUSHER, Case. The Case Improved Laboratory Crusher is designed to meet the constantly increasing demand for a strong Laboratory Ore Crusher with greater capacity than any other similar Crusher. We unhesitatingly recommend it as being the strongest, fastest and best Laboratory Crusher ever built.

The above cuts represent in detail the Combination Hand and Power Machine, which has the essential features of strength and speed, and, at the same time, requires the least power of any Crusher, for work accomplished, on the market.

This Crusher is the most easily cleaned Crusher manufactured. It can be so thoroughly cleaned that there is no possibility of salting. The simple turning of a large hand nut loosens the stationary jaw, which may be removed and brushed off. This large hand nut serves a double purpose—it is sufficiently large so that it gives great leverage and the jaw does not work loose when the Crusher is in motion. The movable jaw is provided with loop handle cast on top, by which the jaw is lifted out of the socket for cleaning.

Another special feature with reference to the jaws is that both are pivoted from a center, so that when one end becomes worn it may be reversed and you receive double wear from the Crusher plates.

The Case Crusher is shipped with three replaceable shims or liners which fit between the stationary jaw and the Crusher frame. By inserting these shims, your product may be ground to any fineness.

This machine is lubricated by means of grease cups in place of the old method of using oil, which means that it will run for days with very little attention.

The capacity of the Crusher of this character depends on the nature of the product to be crushed. This machine will take rock or soft substances $2\frac{1}{2}$ " in diameter reducing so that same will pass through a 10 mesh sieve or finer at the rate of from 50 to 150 pounds per hour.

The shaft is $1\frac{1}{2}$ " in diameter, driven by a 9" pulley with a $2\frac{3}{4}$ " face, at from 450 to 500 revolutions per minute, and requires 1 H. P. for general use. Opening of jaws, $3 \times 2\frac{1}{2}$ ".

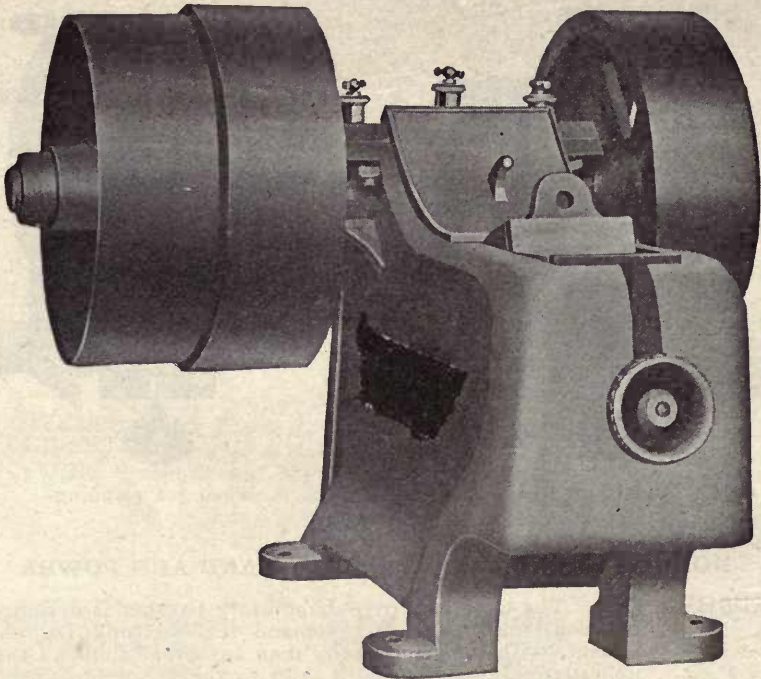
All parts of this machine are made on jigs in exact duplicate, consequently replacements can be had at minimum expense. In other words, the Case Crusher is a thoroughly standardized machine.

Floor or bench space required for small size: $14\frac{1}{2} \times 21$ ". Net weight: 140 lbs. Shipping weight: 165 lbs.

Kindly compare all of the above good Crusher features when in the market for a Crusher and make no mistake.

Price, f. o. b. Factory.....\$50.00

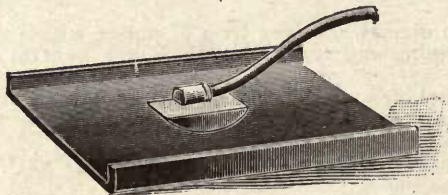
While it is impossible to list all types of Jaw Crushers, Grinders, etc., in the limited space allotted to these machines, we are listing the representative ones for Crushing, Grinding and Pulverizing. We can furnish any special or ordinary type of Crusher or Grinder of various capacities, either hand or power driven.



2467

LARGE SIZE LABORATORY CRUSHER, POWER ONLY

2467 CRUSHER, Case, large size for power only. In construction, it is an exact duplicate of the smaller Crusher, having all the essential features, but is designed for greater capacity and heavier work—for such samples as are required by large mills and smelters. This machine, like the smaller, is easily cleaned by removing the stationary jaw and lifting the movable jaw by handle cast at the top for this purpose. For machine of this size, we recommend a 2-horse power motor and a speed of 400 revolutions per minute. The shaft is $1\frac{1}{8}$ inches, driven by a 14 inch diameter pulley with 4 inch face. Loose pulley made slightly smaller so as to take strain off the Crusher bearing and shafting when not in use. The Crusher jaws are $10\frac{3}{4} \times 4\frac{1}{2}$ inch face. Jaw opening: $3\frac{1}{4} \times 4\frac{1}{2}$ inch. Floor space: 27x28 inch. Net weight, 540 lbs. Shipping weight: 660 lbs. Price, f. o. b. Factory.....\$100.00

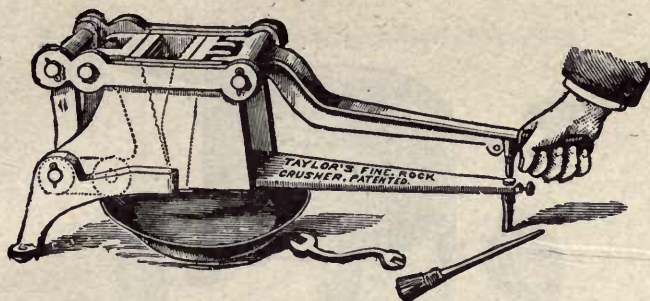


2468

2468 CRUSHER Plate and Rubber, so-called Bucking Board, of chilled iron, for quickly reducing ores to a fine powder. Improved pattern, with plate 18x24 inches, and a muller either 8x4 inches or 8x7 inches, as desired. Without the wooden bench..... 10.00

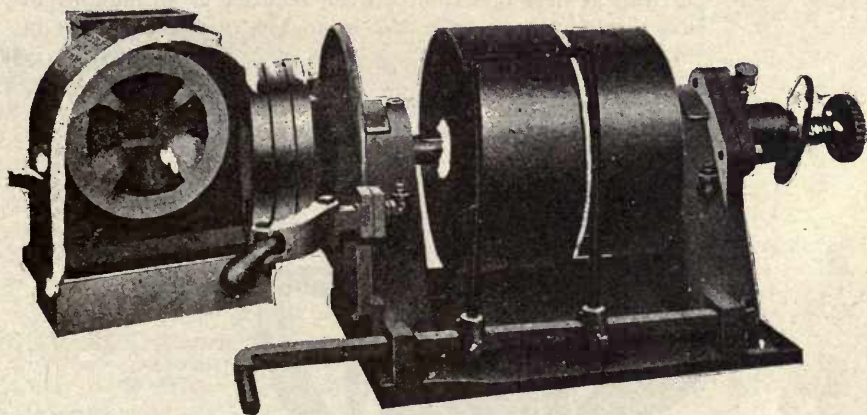
2470 CRUSHER Plate and Rubber, as above, 24x36 inches..... 15.00

2472 CRUSHER Extra large size rubber, weighing about 70 lbs. for above plates 4.00



2474

2474 CRUSHERS, Taylor's Hand Crusher, a low priced machine, substantially made, for reducing ore, coal, etc., to a fine powder. The jaws are 3 inches wide and open at the top $1\frac{3}{4}$ inches. Forty pounds of the hardest rock may be crushed in one hour, 20 per cent of this will pass a 60-mesh sieve. By tightening the adjustment and crushing again, it will all pass a 60-mesh or finer sieve. Weight, 100 pounds, packed for shipment.....\$18.00



2475

THE CASE IMPROVED PULVERIZER

Open for Cleaning

2475 PULVERIZER, Case.

Capacity—The capacity of the Case Grinder depends on the hardness of the ore and the size of the ore fed through the Hopper and the fineness to which it is ground. In actual tests, we find the machine capable of grinding 8 ounces of quartz, 92% of which passed through an 80-mesh sieve, in 10 seconds; 5 pounds sulphide ore in $2\frac{1}{2}$ minutes, 84% of which passed through a 120-mesh sieve.

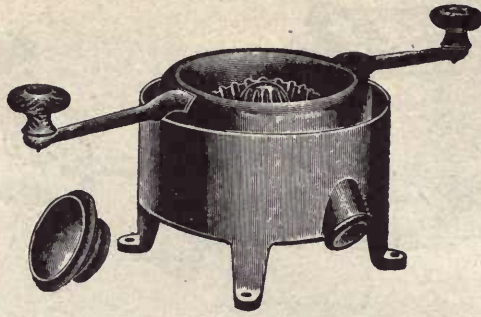
Adjustment—Ore may be ground to any degree of fineness desired, from 60 to 150 mesh by a very simple adjustment, consisting of a hand screw, which is fastened to the rear bearing and acts on the shaft, controlling the distance between the stationary and revolving disc.

We recommend a speed of 1,000 r. p. m., which requires about 2 h. p.

Shipping weight, 400 pounds. Floor space, 20 in. x 44 in.

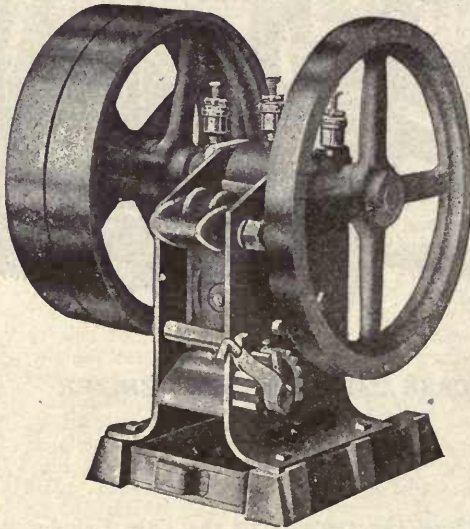
Price, f. o. b. Factory.....\$150.00

Extra Special Metal Discs, per set..... 12.00



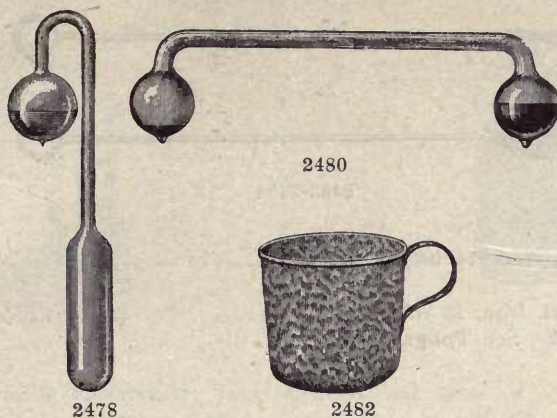
2476

- 2476 CRUSHER, Weatherhead's Patent.** Crusher and Pulverizer combined. Quickly reduces ores, pig iron, rock, clay, coal, etc., to fine powder. Readily cleaned. Discharges material as soon as pulverized. Working surfaces chilled. The cover is made so that it may be used as a small hand mortar, the end of the handles being rounded in form of a pestle. One pound of pig iron at first operation can be reduced in 12 minutes to pass through sieves from No. 80 to 140, one pound glass in $7\frac{1}{4}$ minutes\$25.00



2477

- 2477 CRUSHER, Chipmunk, Improved.** This crusher is made either for hand or power, has a capacity of from 300 to 400 pounds per hour with 400 revolutions per minute. Jaws are 6x3 inches, with an opening of $1\frac{3}{4}$ inches. The feed and discharge of this crusher is such as to recommend it for the crushing of all material and especially coal, which is difficultly discharged from other crushers.
Net weight, 136 pounds, shipping weight, 180 lbs.
For Hand and Power, f. o. b. Factory.....\$ 50.00
- 2477a CRUSHER.** As above for Power T. and L. Pulleys, f. o. b. Factory..... 60.00
- 2477b CRUSHER, Chipmunk Improved, large size.**
Capacity 1,000 to 1,500 pounds per hour with tight and loose pulleys for power, f. o. b. Factory..... 135.00



- 2478 CRYOPHORUS, Weinhold's form\$1.50
 2480 CRYOPHORUS. Wollaston's..... 1.00
 2482 CUPS, Miners', of agate ware.
 Diameter, inches 5 6
 Each\$0.60 \$0.75

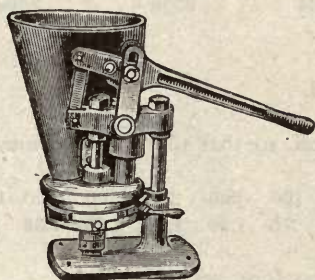


2484

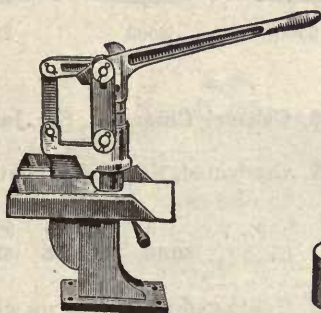


2485

- 2484 CUPELS, Of bone ash, best quality, securely packed in boxes of six dozen.
 Diameter on top, inches..... 1 1¼ 1½ 1¾ 2
 To absorb about, grams..... 10 20 30 50 75
 Per dozen, in boxes of six dozen.....\$0.25 \$0.30 \$0.40 \$0.65 \$1.00
 2484a CUPELS, Dixon's "Wonder."
 Diameter, inches..... 1 1¼ 1½ 1¾ 2
 Price, per hundred.....\$2.00 \$2.50 \$3.00 \$3.50 4.00
 2485 CUPELS, Trays, with detachable handle, for 16 cupels..... 1.00



2486

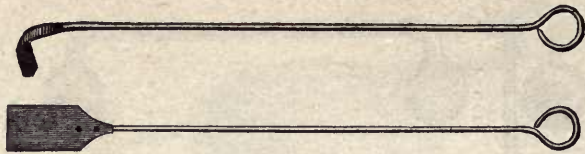


2488



2490

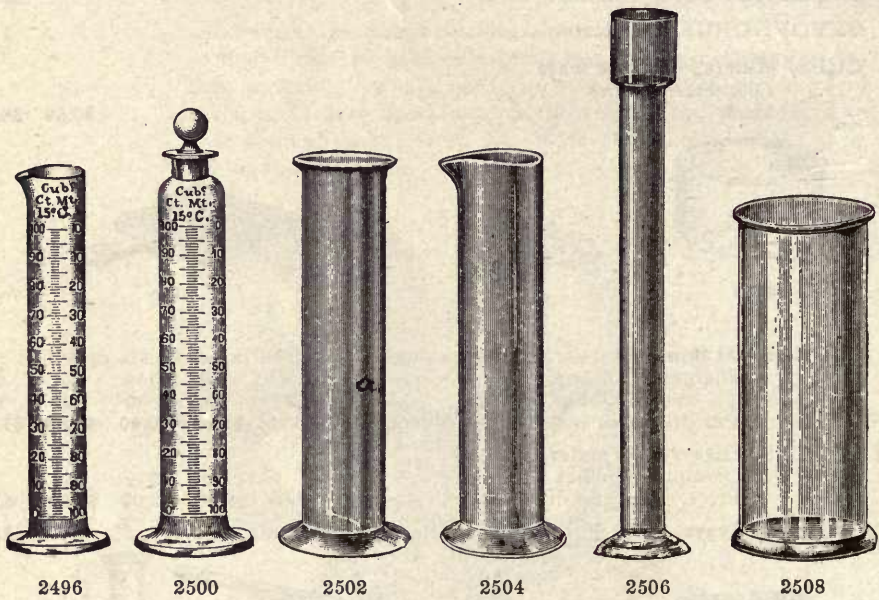
- 2486 CUPEL Machine, Calkins' Automatic. For 1¼, 1½ or 1¾ inch cupels.
 Makes 600 cupels of uniform size, shape and density per hour.
 Price, with one size disc and die.....\$50.00
 Extra disc and die, for any one size..... 15.00
 2488 CUPEL Machine, Calkins' Hand Feed. Table machine, making as perfect
 a cupel as the automatic machine. Price, with one size mould
 and die 30.00
 Extra mould and die, for any one size..... 5.50
 2490 CUPEL Moulds, Brass.
 Size, inches 1¼ 1½
 Each\$2.50 \$2.75



2492-2494

- 2492 CUPEL Rake, iron, 24 inches long.....\$1.00
- 2494 CUPEL Shovel, iron, 24 inches long..... 1.00
- CUPEL Tongs. See Tongs.

CYLINDERS



CYLINDERS, Calcium Chloride. See Jars.

- 2496 CYLINDERS, Graduated, double graduation, so that the divisions may be read up or down.
- | | | | | | | | | | | | |
|------------|--------|-----|-----|-----|-----|------|------|------|------|------|------|
| Cap., c.c. | 5 | 10 | 25 | 50 | 100 | 200 | 250 | 300 | 500 | 1000 | 2000 |
| Each ... | \$0.40 | .45 | .55 | .65 | .75 | 1.00 | 1.10 | 1.25 | 1.35 | 2.55 | 4.50 |
- 2498 CYLINDERS, Graduated in ounces, on glass foot, with lip.
- | | | | | | | |
|------------------|--------|-----|------|------|------|------|
| Capacity, ounces | 1 | 2 | 4 | 8 | 16 | 32 |
| Each | \$0.50 | .75 | 1.00 | 1.50 | 2.00 | 3.00 |
- 2500 CYLINDERS, Graduated and stoppered, double graduation so that the divisions may be read up and down.
- | | | | | | | | | | | |
|------------|--------|------|------|------|------|------|------|------|------|------|
| Cap., c.c. | 10 | 25 | 50 | 100 | 200 | 250 | 300 | 500 | 1000 | 2000 |
| Each ... | \$0.90 | 1.10 | 1.35 | 1.45 | 2.25 | 2.60 | 3.00 | 3.50 | 4.00 | 6.00 |
- 2502 CYLINDERS, Hydrometer Jars, on glass foot, without lip.
- | | | | | | | | | | |
|------------------|--------|-----|-----|-----|-----|-----|-----|-----|------|
| Height, inches | 5 | 6 | 8 | 10 | 12 | 12 | 15 | 18 | 20 |
| Diameter, inches | 1 | 1 | 1½ | 1½ | 1½ | 2 | 2 | 2 | 2 |
| Each | \$0.20 | .25 | .35 | .45 | .50 | .65 | .80 | .95 | 1.15 |



2509



2509(a)

2504 CYLINDERS, Hydrometer Jars, on glass foot, with lip.

Height, inches.....	5	6	8	10	12	12	15	18	20
Diameter, inches.....	1	1	1½	1½	1½	2	2	2	2
Each	\$0.20	.25	.35	.45	.50	.60	.75	.95	1.25

2506 CYLINDERS, Hydrometer Jars, enlarged top, to guard against overflow.

Height, inches.....	14	18
Each	\$1.50	2.25

2508 CYLINDERS, Wide, with top ground for glass plates, used for observing colors of gases, etc.

Size, inches.....	8x4	12x3	12x4	15x3
Each	\$1.50	1.75	3.00	3.50

2509 CYLINDERS—"Drip Cups," with side funnel tube for acid chambers.

Height of cylinder, inches.....	5	6
Each	\$1.25	1.75

For other Cylinders, see Jars.

DEFLAGRATING Globes, see Globes.

" Spoons, see Spoons.

2509(a) DEMIJOHNS, tall shape glass bottle, wicker covered.

Capacity, gallon.....	½	1	2	3	5
Each	\$1.00	1.25	1.50	2.50	3.50



2510



2516

2510 DESICCATOR, Atwater's. With triangle\$3.00**2516 DESICCATOR, Fruehling's, of large size, heavy glass, with large perforated porcelain plate which will support a number of crucibles or material to be dried. It will be found to be a valuable form for laboratory use.**

Inside diameter in inches.....	8	10
Price, each	\$8.00	9.75



2522

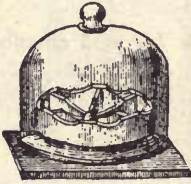


2526

2522 DESICCATOR, Scheibler's. With knob top, ground air tight.
 Inside diameter, inches..... 4 6 8 10
 Each\$1.50 2.00 5.50 10.00

2524 DESICCATOR, Scheibler's. With porcelain plate.
 Diameter, inches..... 4 6 8 10
 Each\$2.25 3.10 7.30 12.25

2526 DESICCATOR, Scheibler's. With stopcock ground in top. For Vacuum.
 Inside diameter, inches..... 4 6 8 10
 Each\$6.00 7.50 10.00 17.50



2528



2534

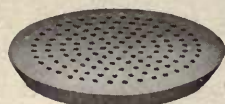
2528 DESICCATOR, Bell Glass and acid dish on ground glass plate.
 Diameter of bell glass, inches..... 6 8 10
 Diameter of glass plate..... 8 10 12
 Diameter of acid dish..... 4¾ 5¾ 6¾
 Each\$4.00 4.50 5.00

2531 DESICCATOR Plates, of aluminum.
 Diameter, inches..... 3¾ 5½
 Each\$1.50 1.50

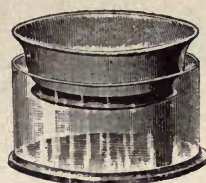
2532 DESICCATOR Plates, of copper.
 Diameter, inches..... 3¾ 5½
 Each\$1.00 1.00

2534 DESICCATOR Plates, porcelain, glazed on one side, on three small feet.
 Size number 1 2 3 4 5
 Diameter, mm..... 95 115 140 190 240
 Thickness, mm..... 4 4 4 4 4
 Number holes..... 3 4 5 7 8
 Diameter of holes..... 30 30 30 30 30
 Each75 1.00 1.25 2.00 2.50

2534(a) Each (without feet)..... .75 .85 1.10 1.80 2.25



2535



2536

2535—DESICCATOR—Plates of Porcelain, glazed on one side, without feet, with numerous small holes. Thumb hole in center.

Size number.....	4	5
Diameter, mm.....	190	230
Number holes	700	900
Diameter holes, mm.....	2	2
Each	\$1.75	2.10

2536 DIALYSERS, Graham's, of stout white glass.

Diameter, inches	6	8
Each	\$2.50	3.50



2538-2540

2538 DIAMOND for cutting glass; in ebony handle, with key for breaking....\$ 5.00

2540 DIAMOND for writing on glass; in handle..... 2.50

2542 DIAMOND Ink, for writing on glass, in 1 ounce gutta-percha bottle..... .50



2544



2546



2548

2544 DIES, Figures, of steel, for stamping bullion, etc. Best quality.

Face, inches	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{5}{8}$	$\frac{3}{8}$	$\frac{7}{8}$	$\frac{1}{2}$
Set	\$1.50	1.75	2.00	2.50	3.00	3.50	4.00

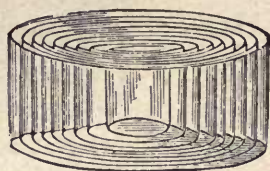
2546 DIES, Letters, of steel, for stamping bullion, etc. Best quality.

Face, inches	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{5}{8}$	$\frac{3}{8}$	$\frac{7}{8}$	$\frac{1}{2}$
Set	\$3.50	4.00	4.50	5.00	6.00	8.50	9.00	10.00

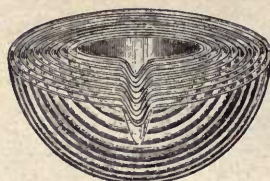
2548 DIPPERS, Agate Ware, with wooden handle.

Size, inches	$4\frac{1}{4} \times 3$	$5\frac{1}{4} \times 3\frac{1}{4}$	$6 \times 3\frac{1}{2}$	$6\frac{3}{4} \times 3\frac{1}{4}$
Each	\$0.60	.75	.90	1.00

DISHES



2550



2552

2550 DISHES, Crystalizing, of best American glass, straight walls, flat bottoms.

Diameter, cm.	5	6	7	8	9	10	11
Each	\$0.20	\$0.25	\$0.30	\$0.35	\$0.35	\$0.40	\$0.50
Diameter, cm.	12	13	14	16	18	20	
Each	\$0.60	\$0.70	\$0.80	\$1.00	\$1.50	\$2.00	

2552 DISHES, Evaporating, round bottom, of best American glass, with lip.

Diameter, cm.	4	5	6	7	8	9	10	12	15
Each	\$0.20	\$0.25	\$0.30	\$0.35	\$0.40	\$0.45	\$0.50	\$0.75	\$1.50



2554



2556

2554 DISHES, Evaporating, Iron, Porcelain lined.

Diameter, inches	6	8	10	12
Capacity, pint	1	2	4	6
Each	\$1.00	\$1.25	\$1.50	\$2.00
Diameter, inches	13	16	18	20
Capacity, gallon	1	2	3	4
Each	\$2.50	\$3.00	\$3.75	\$5.00

2556. DISHES, Evaporating. Of pure nickel.

Diameter, inches	1 5/8	2	2 3/8	3 1/8	4	4 3/4	6
Each	\$0.45	\$0.55	\$0.65	\$1.00	\$1.40	\$2.00	\$2.45

2557. DISHES, Copper, round bottom, with lip.

Diameter, inches	2	3/4	3 1/2	4
Capacity, cc.	40	100	200	300
Each	\$0.40	\$0.50	\$0.60	\$0.80



2559



2559(a)

2559 DISHES, Aluminum, for milk analysis with flat bottom and straight sides, polished outside with smooth finish inside.

Diameter, inches	2	2 1/2	2 3/4	3	4
Height, inches	1/2	5/8	3/4	1	1
Each	\$0.25	\$0.30	\$0.35	\$0.40	\$0.50
Per dozen	\$2.40	\$3.00	\$3.60	\$4.00	\$5.00

2559(a) DISHES, Aluminum, for moisture determinations with flat bottom, flaring sides and slip-in inverted cover. Diameter on top, 55 mm. Height, 15 mm. Each..... \$0.50



2560



2562

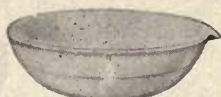
2560 DISHES, Evaporating, Coors, American Porcelain with lip. Sizes up to five are glazed inside and outside with exception of rim. Larger sizes are partly glazed outside.

Size number	.000	00	0	1	2	3	4	5	6	6a	7
Diameter, mm.	60	70	80	85	90	100	110	120	145	162	185
Height, mm. ...	24	27	30	33	37	42	43	50	48	51	54
Capacity, cc. ...	35	60	80	100	140	175	210	300	385	535	765
Each	.....\$0.12	.18	.20	.30	.35	.40	.45	.55	.70	.80	.90

Size number	8	8a	9	10	11	12	13
Diameter, mm.	215	230	265	305	360	400	460
Height, mm.	63	70	80	95	116	140	175
Capacity, cc.	1285	1430	2200	3250	5700	10000	16500
Each	.....\$1.20	1.50	1.80	3.00	4.00	9.00	18.00

2562 DISHES, Evaporating, Coors, American Porcelain with wide lip and heavy welter rim. Glazed inside, but only partly outside.

Size number	12	13
Diameter, mm.	400	460
Height, mm.	140	175
Capacity, cc.	10000	16500
Each	.....\$12.00	20.00



2564



2568

2564 DISHES, Evaporating, Coors, American Porcelain, shallow form, with lip. Glazed inside but only partly outside.

Size number	1	2	3	4	5	6	7
Diameter, mm.	70	80	95	105	120	140	160
Height, mm.	15	20	23	30	34	40	48
Capacity, cc.	45	60	95	160	200	350	550
Each	.....\$0.20	.25	.40	.60	.75	.90	

2568 DISHES, Evaporating, Coors, American Porcelain, with lip and flat bottom. Shallow form.

Number	1	2	3	5	6	7	
Capacity cc.	45	60	95	200	350	550	
Diameter mm.	70	80	95	120	140	160	
Each	\$0.20	.25	.40	.50	.60	.75	.90

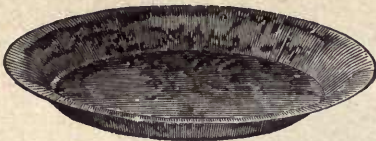
2569 DISHES, of Fused Silica, unaffected by sudden and extreme changes of temperature, with lip and round bottom.

No.	1	3	5	7	9	10	11
Diameter, mm.	51	70	83	89	98	108	137
Depth, mm.	21	25	30	22	30	44	57
Capacity, cc.	20	50	75	80	125	200	400
Each	.....\$1.00	1.15	1.25	1.35	1.60	1.85	2.85

2571 DISHES, of Fused Silica, as above, with lip and flat bottom, shallow form.

No.	1	2	3	4
Diameter, mm.	63	73	95	127
Depth, mm.	13	13	18	21
Capacity, cc.	20	40	50	100
Each	.....\$1.15	1.25	1.35	1.85

2572 DISHES, Silver, any size, made to order. Please write for prices.



2576



2577

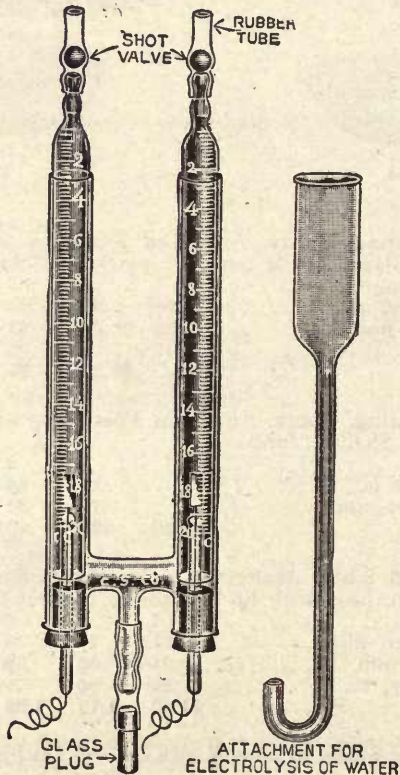
2576	DISHES, Lead, for etching glass with hydro fluoric acid.					
	Diameter, inches	2	2½	3	4	5
	Each	\$0.15	.20	.25	.30	.35
2577	DISHES, Steel, enameled inside and outside. Very light in weight, strong and acid proof.					
	Diameter, inches	6¾	7¾	10½	12¾	
	Capacity, pints	1	2	4	7½	
	Each	\$0.60	.80	1.20	1.70	
2579	DISHES, Tin Foil, in shape of bottle caps used extensively in moisture determinations.					
	Size, inches	2½	2½x5½	3x5½		
	Per hundred	\$1.00	1.40	1.60		
	Per dozen	.15	.20	.25		

DISTILLING APPARATUS, see Retorts and Stills.
DISTILLING FLASKS, see Flasks.
DISTILLING TUBES, see Tubes.
DRYING APPARATUS, see Dessicators, Ovens and Vacuum Apparatus.
DRYING Ovens, see Ovens.

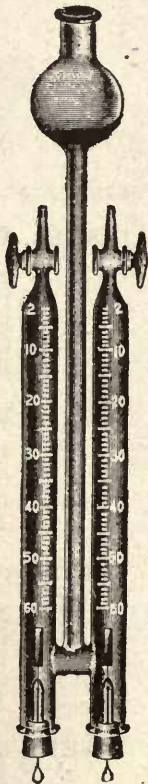
ELECTROLYTIC APPARATUS



2591



2593



2597

2591 ELECTROLYSIS OF WATER APPARATUS, improved with platinum electrodes that may easily be replaced by copper electrodes or by carbon electrodes for electrolysis of hydrochloric acid..... \$7.50



2612



2616



2618

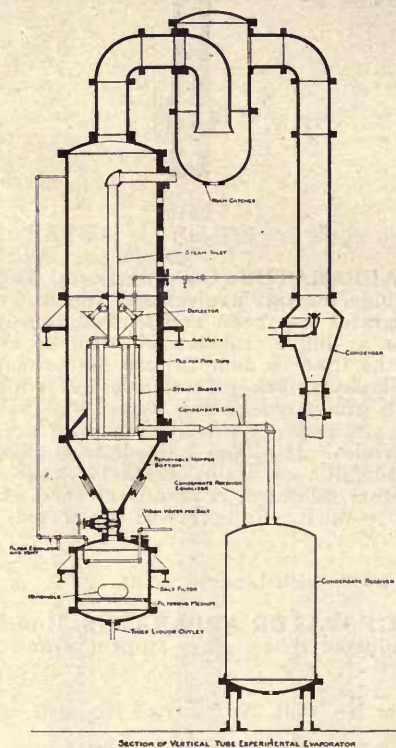
- 2593 ELECTROLYSIS APPARATUS** (Osborne Form), for study of conductivity of liquids, ionization, electro-plating and electrolysis of water. This apparatus has been constructed to supply the urgent demand for a simple, substantial form of electrolytic apparatus that can be used to demonstrate the principles involved in the theory of electrolytic dissociation. It consists of an outer U tube with graduated sliding tubes, shot valves, glass plug and platinum electrodes, which are easily replaced by carbon or copper electrodes. It allows immediate change of liquids, permits the introduction of litmus, methyl orange, cloth for bleaching or any other indicator, is readily cleaned, requires least amount of liquid to fill it. Complete as illustrated, with instruction for use \$ 7.50
- 2595 SUPPORT** for No. 2593, with binding posts..... 3.50
- 2597 ELECTROLYSIS OF WATER APPARATUS**, Hoffman's improved form with graduated tubes, glass stopcocks and removable platinum electrodes 10.00
- 2599 SUPPORT** for either No. 2591, No. 2597 or No. 2601, with binding posts... 3.50
- 2601 ELECTROLYSIS OF WATER APPARATUS**, same as No. 2597 but without glass stopcocks..... 7.50
- 2603 CARBON ELECTRODES**, two rubber stoppers fitted with carbon electrodes and connectors, adapted to Nos. 2591-2601 inclusive..... .75
- 2605 COPPER ELECTRODES**, two rubber stoppers fitted with copper electrodes and connectors, adapted to Nos. 2591-2601 inclusive..... .75
- 2607 PLATINUM ELECTRODES**, two rubber stoppers with platinum electrodes and connectors, adapted to Nos. 2591-2601 inclusive..... 2.50
- 2612 EUDIOMETER**, Bunsen's, with platinum electrodes.
Capacity 55 cc. in 1-5° 100 cc. in 1-5°
Each \$2.50 3.50
- 2614 EUDIOMETER**, Bunsen's, graduated into millimeters, with platinum electrodes.
Millimeters 300 500
Each \$2.50 \$3.50
- 2616 EUDIOMETER**, Mitcherlich's new style, with stopcock and platinum electrodes.
Size 50 cc. in 1-5 100 cc. in 1-5 400 mm.
Each \$3.00 4.00 5.00
- 2618 EUDIOMETER**, Ure's graduated in cc. U form, with platinum electrodes
50 cc. in 1-5..... \$3.50
- 2620 EUDIOMETER**, Ure's improved form. The bend is made of heavy rubber tubing so that the instrument can be straightened out for convenience in filling. 50 cc. in 1-5..... 5.00

EVAPORATORS

Waste products become by-products when properly handled. During the last quarter of a century the Swenson Evaporator Company has been instrumental in the development of a large variety of by-product industries. Such interesting instances as the recovery and marketing of products from packing house waste waters, iron sulphate from wire and plate mills, pickle solutions, etc., are examples of successes in which they properly take a large share of credit.

The Swenson Evaporator Company have installations at several institutions of learning throughout the country, among which the University of Michigan, Massachusetts Institute of Technology, and Armour Institute of Technology are the most noted examples.

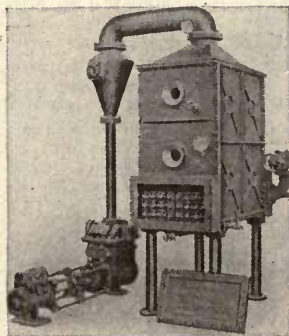
Your further attention is directed to the Swenson advertisement in the advertising section.



SECTION OF VERTICAL TUBE EXPERIMENTAL EVAPORATOR

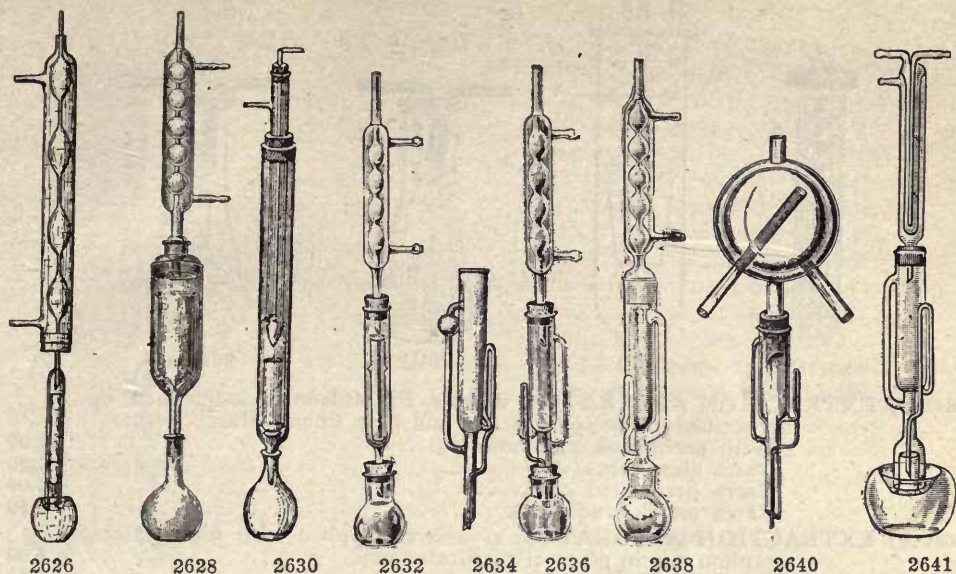
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One of several Swenson types employed in the Swenson-University of Michigan Laboratory, where experiments with liquors in car lots can be made. These are the only facilities of this kind offered to American industries.

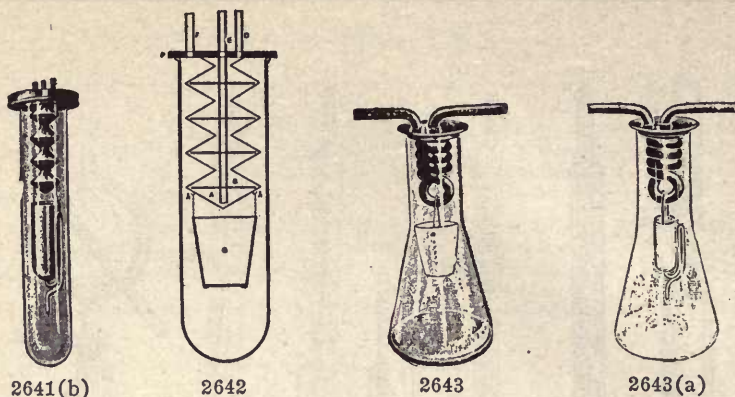


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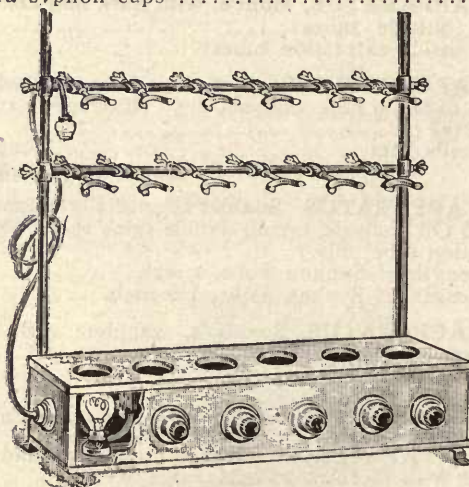
Swenson Jr. Single Effect, cast iron body, steel or copper horizontal tubes, jet condenser, vacuum pump, fittings. See blueprint, page 21, Swenson catalogue.



- 2626 **EXTRACTION APPARATUS**, Knorr's, with ether tight mercury joints, dispensing with corks and ground joints, complete..... \$6.00
 Extra condenser with adapter sealed on..... 3.60
 Extra extraction tubes with platinum sieve..... 3.50
 Extra flasks40
- 2627 **EXTRACTION APPARATUS**, Knorr's, as above, but supplied with Sy's flask instead of Knorr's flask..... 6.50
 Extra Sy's flasks, 150 cc. capacity..... 1.00
- 2628 **EXTRACTION APPARATUS**, Lehmann's, especially suitable for extraction of bulky substances. With ground joints and one flask... 5.50
- 2630 **EXTRACTION APPARATUS**, Krussler's, with condenser, and 3 flasks ground on 6.00
- 2632 **EXTRACTION APPARATUS**, Mohr's, with flask and condenser..... 3.00
 Extra outside tubes..... .80
 Extra inside extraction tubes..... .30
- 2634 **EXTRACTION APPARATUS**, Soxhlet's, specially adapted to the extraction of fat in milk analysis, etc. (Extraction tube only.)
 Capacity, cc. 60 125 200
 For shells, mm..... 22x80 33x80 43x123
 Each \$2.00 3.00 4.00
- 2635 **EXTRACTION APPARATUS**, Soxhlet's, specially adapted to Cotton Seed Oil analysis, taking double thick shells 22x80 mm. (Extraction tube only.)
 A. Length of Syphon Tube, 1 inch..... \$2.50
 B. Length of Syphon Tube, 1¼ inch..... 2.50
- 2636 **EXTRACTION APPARATUS**, Soxhlet's, complete with flask and condenser.
 Capacity, cc. 60... 125... 200
 Each \$2.50 5.50 6.50
 N. B.—For size and price of extraction tubes only, see No. 2634.
- 2638 **EXTRACTION APPARATUS**, Soxhlet's, all points ground air tight, complete with three flasks and condenser.
 Capacity, cc. 60 125
 Each \$6.50 7.50
- 2640 **EXTRACTION APPARATUS**, Soxhlet's, complete with nickel plated brass ball condenser and flask.
 Capacity, cc. 60 125 175
 Each \$6.50 7.50 10.00
- 2641 **EXTRACTION APPARATUS**, Soxhlet's modified, with ground in Hopkins' Condenser and Knorr's flasks for mercury seal. An ideal combination of ether tight joints.
 Capacity, cc. 60 125
 For extraction shells, mm..... 22x80 33x80
 Each \$6.50 7.50

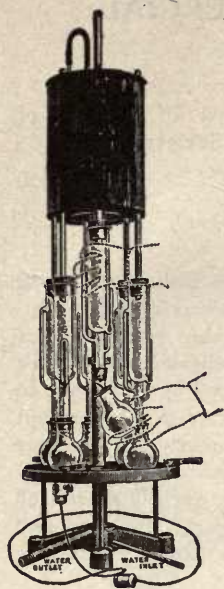


- 2641(a) EXTRACTION APPARATUS**, Wiley's, Richardson's, modification, described in the Jour. of Ind. and Eng. Chem., March, 1912.
- | | |
|------------------------------------|--------|
| With perforated aluminum cup..... | \$5.00 |
| Extra glass tubes with flange..... | 1.50 |
| Extra perforated cups..... | 1.00 |
| Extra metal condensers | 2.50 |
- 2641(b) EXTRACTION APPARATUS**, as above, supplied with nickel plated syphon cup in place of perforated cup..... 5.00
- | | |
|-------------------------|------|
| Extra Syphon cups | 1.50 |
|-------------------------|------|
- 2642 EXTRACTION APPARATUS**, Wiley's, consisting of a porcelain Gooch crucible suspended from a metal condenser which is fitted to a glass tube with ground flange, very condensed and convenient, doing away with all stoppers and connections..... 4.50
- 2643 EXTRACTION APPARATUS**, Underwriter's pattern, described in the Jour. of Ind. and Eng. Chem., July, 1912. Consisting of special extraction flask, metallic spiral condenser and suspended porcelain Gooch crucible
- | | |
|-----------------------------|------|
| Extra flasks | 3.00 |
| Extra Gooch Crucibles | .50 |
| Extra condensers | .75 |
| | 1.75 |
- 2643(a) EXTRACTION APPARATUS**, Underwriter's pattern, modified with glass syphon cup, see Jour. of Ind. and Eng. Chem., January, 1914
- | | |
|-------------------------|------|
| Extra syphon cups | 3.00 |
| | .75 |



2643(b)

- 2643(b) ELECTRIC EXTRACTION APPARATUS.** This apparatus consists of a set of six Electric Lamps, each with switch, encased in a box support made of fireproof asbestos wood, 30½ inches long, 5½ inches wide and 7 inches high, including legs, with 1¾-inch hole over each lamp. The box support is equipped with iron uprights, extreme height 31½ inches.....\$50.00
- 2643(c) EXTRACTION APPARATUS**, electrically heated, oblong form, 5½ inches wide and 9 inches high, made of sheet iron. Each Heater, which is 3½ inches diameter, is a unit, either one or all may be used at one time as desired—six heaters, 24 inches long..... 75.00



2643(c)

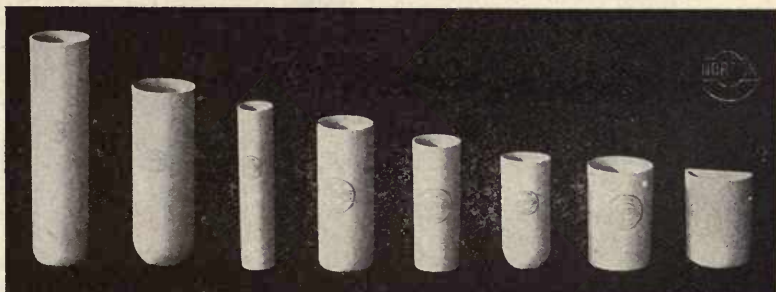
2643(c) EXTRACTION APPARATUS, Sargent's, patented Dec. 23, 1913, **Electrically Heated, Revolving type**. Will accommodate any style or size of glassware. Sliding condensing tubes obviate the necessity for moving the corks when once placed. No valves or washers. Adjustable in height. Requiring only about a square foot of space, may be set up in any out-of-the-way corner. No rubber tubing or clamps at condensers. Only one connection at water inlet and outlet necessary. Arranged for either 110 or 220 volts direct or alternating current.

Price without glassware.....\$40.00

In ordering, state voltage desired.



2644



2644(b)

2644 EXTRACTION SHELLS, Whatman, fat free paper, for use in Soxhlet's and other extraction apparatus. The use of these shells renders it impossible for any of the material to find its way into the solvent; can be used over and over again. Put up in boxes of 25.

Length, mm.....	80	80	80	90	94	123
Diameter, mm.....	22	25	39	19	33	43
Per box of 25.....	\$3.15	3.55	3.55	3.15	4.40	7.10

2644(a) EXTRACTION SHELLS, Whatman, as above, but of double thickness, will not permit the finest substances to pass through; put up in boxes of 25.

Length, mm.....	80	80	80	90	94	123
Diameter, mm.....	22	25	33	19	33	43
Per box of 25.....	\$5.28	5.92	5.92	5.28	7.36	11.84

2644(b) EXTRACTION SHELLS, Alundum, for use with Soxhlet's and other extraction apparatus; may be used repeatedly and easily cleaned by ignition.

Length, mm.....	60	70	80	90	100
Diameter, mm.....	26	25	30	19	34
Shape at bottom.....	Round	Flat	Flat	Flat	Round
Each .....Net	\$0.40	.40	.45	.50	.60

Above Shells are supplied in three degrees of porosity: RA84, Dense; RA360, Medium; RA98, Porous. If no degree of porosity is specified, RA98 will be sent.

APPARATUS FOR ANALYSIS OF COMMERCIAL FATS AND OILS

(By Standard Methods as adopted January 13, 1918, Committee of Division of Industrial Chemists and Chemical Engineers of American Chemical Society).

VACUUM OVEN

2645/1 "The Standard F. A. C. Vacuum Oven has been designed with the idea of affording a simple and compact vacuum oven which will give as uniform temperatures as possible on the shelf. It consists of an iron casting of rectangular sections with hinged front door, which is accurately counterpoised. The door is made tight by a gasket and which can be lowered on opening the oven so as to form a shelf on which samples may be rested. The oven contains but one shelf which is heated from above as well as below by means of resistance coils. Several thermometer holes are provided in order to ascertain definitely the temperature at different points on the shelf. The entire oven is supported by means of a 4" standard pipe which screws into the base of the oven and which in turn is supported by being screwed into a blind flange of suitable diameter which rests on the floor or work table."

Dimensions—overall—15"x11"x8" high.

Price for oven.....\$150.00

MOISTURE DISHES

2645/2 Shallow, glass dish, beaker form, approximately 6 or 7 cm. in diameter and 4 cm. deep.

Price, per dozen.....\$3.00

EXTRACTION CYLINDERS

The cylinder may or may not be glass stoppered. Dimensions—12" high and 1 $\frac{3}{8}$ " diameter. Graduated at 40, 80 and 130 cc. These cylinders are made with base or plain bottomed with nickel plated holders which may be screwed to work table.

2645/3	Cylinders, plain bottom.....	Each, \$0.50
2645/4	Cylinders, with base.....	Each, .75
2646/5	Cylinders, glass stoppered, with base.....	Each, 1.75
2646/6	Cylinders, glass stoppered, with plain bottom.....	Each, 1.50
2646/7	Holders, nickel plated.....	Each, .75

STANDARD THERMOMETER (TITER)

2646/8 "The thermometer is graduated at zero and in 1/10° from 10°C to 65°C, with one auxiliary reservoir at the upper end and another between the zero mark and the 10° mark. The cavity in the capillary tube between the zero mark and the 10° mark is at least 1 cm. below the 10° mark, the 10° mark is 3 or 4 cm. above the bulb, the length of thermometer being 37 cm. overall. The thermometer has been annealed for 75 hours at 450°C, the bulb is of Jena normal 16" glass, or its equivalent. Bulb is about 3 cm. long and 6 mm. in diameter. Stem of thermometer is 6 mm. in diameter and made of the best thermometer tubing, with scale etched on the stem. The thermometer must be certified by the U. S. Bureau of Standards.

Thermometer as above described, with certificate of Bureau of Standards, each.....\$10.00

2646/9 Same, without certificate of the Bureau of Standards..... 6.00



2646

2646 EXTRACTION PAPER, Whatman, fat free. For the accurate determination of fat in milk by the Adams method.

Size of strip.....58x6.25 cms.

Per package of 50.....\$2.80

Per package of 100.....5.20

See also Milk Analysis Apparatus.

FERMENTATION TUBES, see No. 4200.

FIGURES, of Steel, see Dies.



(a)



2647(b)



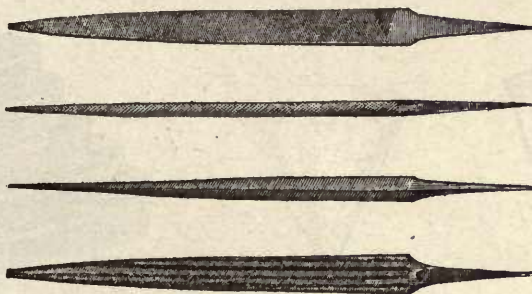
2647(c)

2647 FAUCET CONNECTIONS—For rubber tubing for smooth faucets. See two styles, a and b:

Size faucet, inch..... $\frac{1}{2}$ $\frac{5}{8}$

Each\$0.60 .80

2647(c) FAUCET CONNECTIONS—For rubber tubing, with hydrant thread. Each, .60



2648-2650-2652-2654

2648 FILES, Flat, for shaping corks, etc.

Length, inches..... 5 6 8

Each\$0.25 .30 .40

2650 FILES, Half Round, for shaping corks, etc.

Length, inches..... 5 6 8

Each\$0.25 .30 .40

2652 FILES, Round, for enlarging holes in corks, etc.

Length, inches..... 4 5 6 8

Each\$0.20 .55 .30 .40

2654 FILES, Triangular, for cutting glass tubing, etc.

Length, inches..... 3 4 5 6

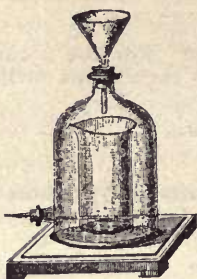
Each\$0.16 .20 .25 .30

2656 FILE Handles..... .10

FILTERING APPARATUS



2661



2662



2663



2664

2661 FILTER APPARATUS—Fitzgerald's, for constant level. Capacity of reservoir 250 cc. The lower opening is closed by means of a long glass rod with ground stopper. The side opening is intended for pouring in the liquid to be filtered. **\$2.50**

2662 FILTER APPARATUS—Consisting of glass plate, bell jar with tubulature below and at top, fitted with rubber stopper and funnel. Size of bell jar, inches..... $5\frac{1}{2} \times 8\frac{1}{2}$ 7x11
Each **\$5.00 8.50**

2663 FILTER APPARATUS—Consisting of glass plate and bell jar, 5x9 inches, fitted with rubber stopper and funnel..... **\$5.00**

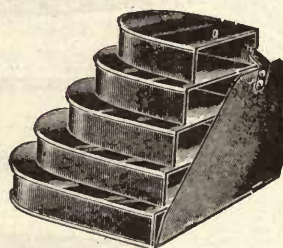
2664 FILTER APPARATUS—With ground in funnel and ground on cover, for filtering volatile liquids.
Capacity, cc..... 500 1000
Each **\$5.00 6.00**



2668



2669



2671

2668 FILTER Bags, Felt.
Size, inches 11x12 13x15 14x16 16x19
Capacity, gallons 1 $1\frac{1}{4}$ 1 2-3 2
Each **\$1.75 2.00 2.25 3.25**

FILTER Cones of Platinum, see Cones, Platinum.

2669 FILTER Cone—For filtering, made of nickel, seamless, and profusely perforated;
Size, $1\frac{1}{2}$ inches diameter..... **\$2.50**

2669(a) FILTER Cones, Porcelain, glazed with exception of rim, with holes about 1 mm. diameter.
Size number 4, diameter 63 mm. Each..... **\$1.50**

2671 FILTER CASES—Japanned tin, holding 6 sizes of cut filters, from 3 to $7\frac{1}{2}$ inches **3.50**



2673

2673 FILTER CONES, Alundum, for the rapid and complete separation of precipitates from solutions by means of suction. They may be used in any sixty degree funnel and are placed in operation by stretching a wide band of rubber tubing over the funnel.

No.	7241	7056	7730
Diameter, inches.....	1 $\frac{3}{4}$	2 $\frac{1}{2}$	4 $\frac{1}{2}$
Height, inches	1 $\frac{3}{8}$	1 $\frac{7}{8}$	3 $\frac{1}{2}$
Each	\$0.30	.35	.50

Above cones can be furnished in three degrees of porosity, R A 320 Dense; R A 321 Medium; R A 322 Porous.

If no degree of porosity is specified R A 322 will be sent.



2678

2678 FILTER PLATES, Hirsch—Porcelain. Glazed, Perforated Beveled edges for use in funnels.

Size No.....	0	1	2	3	4	5
Diameter, mm.....	21	25	38	50	75	100
Each	\$0.25	.30	.35	.40	1.00	1.50

2679 FILTER PLATES, Alundum, can be used in place of Hirsch plates in many operations. Made with straight or 60 degree beveled edge. Supplied in two degrees of porosity, R A 225 medium and R A 98 porous.

Diameter, inches.....	$\frac{3}{4}$	1	1	2	3	4
Thickness, inches.....	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Edges	Straight	Straight	Bevel	Bevel	Bevel	Bevel
Each	\$0.25	.25	.25	.35	.50	.75

If no degree of porosity is specified R A 98 will be sent.

2680 FINGER COTS, Black rubber, thin or thick, per dozen.....**\$0.60**

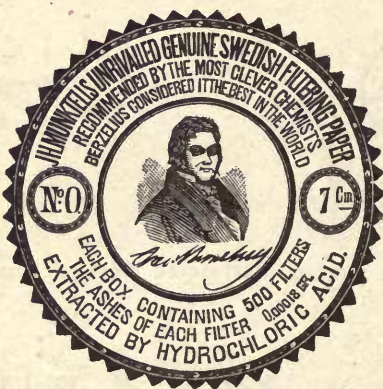


2681

2681 FILTER PRESS, Laboratory Moore Experimental, round pattern. For laboratory use, built to stand a pressure of 150 pounds to the square inch. Made with flat plates and frames, so that filter cloth or paper can be used; of iron, with brass valves fitted to pump; weight, about 125 pounds. Net, each.....\$100.00

FILTER PAPER

2716 FILTER PAPER, Celeritas. These filters are made of an excellent quality of white papers which filters rapidly, and is unusually strong when wet. They give excellent satisfaction in qualitative analysis, and in pharmaceutical and manufacturing work. Round filters, 100 in a package.
Diam., inches.. 3 3½ 4 5 6 8 10 13 15 18 20
Per 100 filters..\$0.20 .22 .24 .30 .40 .66 .92 1.40 1.72 2.40 3.00
In square sheets, 19x19 inches, per quire.....\$ 0.80
Per ream..... 13.60



MUNKTELL'S SWEDISH FILTER PAPER

Weights of Ashes from Munktell's Swedish Cut Round Filters

	Size	5.5 Ctm. Gram.	7 Ctm. Gram.	9 Ctm. Gram.	11 Ctm. Gram.	12.5 Ctm. Gram.	15 Ctm. Gram.
No. 00.....		0.000011	0.000018	0.000030	0.000045	0.000058	0.000083
No. 0.....		0.000060	0.00010	0.00017	0.00025	0.00033	0.00046
No. 0B.....		0.000085	0.00014	0.00024	0.00035	0.00047	0.00065
No. 1F.....		0.00014	0.00023	0.00038	0.00056	0.00073	0.00105
No. 2.....		0.00018	0.00030	0.00051	0.00074	0.00095	0.00138

Owing to import restrictions we do not list these papers under present conditions. We shall be glad, however, to quote on your requirements of these filters from our large and comprehensive Chicago stock.

- 2707 FILTER PAPER,** Whatman No. 4 (S. & S. No. 604), a soft paper of more open texture than the preceding. Extremely rapid, but not recommended for use with the finest precipitates. Especially adapted for the rapid filtration of gelatinous and large particles precipitates such as Ferric Hydroxide and Aluminum Hydroxide; also useful for Pharmaceutical purposes, such as the filtration of fruit juices, syrups, oils, etc. Widely used in Copper and other Ore Mining, Sugar and Cement Laboratories.

Diameter, cm.....	7	9	11	12.5	15	18.5	24
Per 100 circles.....	\$0.30	.40	.50	.65	.90	1.30	2.22
In sheets 18¼ inches x 22½ inches, per 100.....	\$ 8.75						
Ditto, per ream.....	39.90						

- 2708 FILTER PAPER,** Whatman No. 5 (S. & S. No. 602), a very tough, hard paper of close texture, that will retain the finest precipitates, such as Barium and Lead Sulphates even when freshly precipitated. Especially suited for use with solutions which are filtered with difficulty, and for vacuum filtrations with the Buechner funnel, etc.

Diameter, cm.....	7	9	11	12.5	15
Per 100 circles.....	\$0.27	.34	.41	.54	.75
In sheets, 18¼ inches x 22½ inches, per 100.....	\$ 6.95				
Ditto, per ream.....	31.50				

- 2709 FILTER PAPER,** Whatman No. 30 (Dreverhoff No. 207; Munktell No. 0), a single acid-washed paper of low ash content, rapid and retentive. Very satisfactory for the filtration of Ammonium Phospho-Molybdate, Barium Sulphate when properly precipitated, for volumetric Lime determinations and for general quantitative work when the lowest ash is not important. Extensively used in Cement and Metallurgical Laboratories.

Diameter, cm....	7	9	11	12.5	15	18.5
Ash weight per circle,						
grams .....	.00012	.0002	.0003	.0004	.00057	.00087
Per 100 circles....	\$0.68	.90	1.20	1.50	1.90	2.70
In sheets, 18¼ inches x 22½ inches, per 100.....	\$21.55					
Ditto, per ream.....	97.80					

- 2710 FILTER PAPER,** Whatman No. 31 (Munktell No. 0B), a single-acid-washed paper, similar to No. 30, but more open in texture, making it more rapid. On account of its extreme rapidity it is not recommended for the finest precipitates. Suitable for the very rapid filtration of gelatinous and large particle precipitates, for volumetric determinations of Phosphates, for Silicon in Iron Analysis, and general rapid quantitative separations where the lowest ash weight is not essential. Extensively used in Metallurgical Laboratories.

Diameter, cm.....	7	9	11	12.5	15	18.5
Ash weight per circle,						
grams .....	.00012	.0002	.0003	.0004	.00057	.00087
Per 100 circles....	\$0.68	.90	1.20	1.50	1.90	2.70

- 2711 FILTER PAPER,** Whatman No. 40 (S. & S. No. 5892, White Ribbon), a double-acid-washed paper of very low ash, all mineral matter having been removed by treatment with hydrochloric and hydrofluoric acids. Filters rapidly and retains fine precipitates. This is the standard double-washed grade for analytical purposes. Excellently suited for Barium Sulphate when properly precipitated and filtered hot, also for Lead Sulphate, and for crystalline precipitates, such as Magnesium-Ammonium Sulphate, etc.

Diameter, cm.....	7	9	11	12.5	15
Ash weight per circle,					
grams .....	.00005	.000082	.00012	.00016	.00023
Per 100 circles.....	\$1.20	1.70	2.00	2.30	2.70

- 2712 FILTER PAPER,** Whatman No. 41 (S. & S. No. 589, Black ribbon), a double-acid-washed paper similar to No. 40, but more open in texture and therefore filters more rapidly. Suitable for Iron, Aluminum, and other gelatinous precipitates which can be filtered quickly and washed rapidly and easily. Widely used in determining Silicon in Iron and Steel Analysis.

Diameter, cm.....	7	9	11	12.5	15
Ash weight per circle,					
grams .....	.00005	.000082	.00012	.00016	.00023
Per 100 circles.....	\$1.20	1.70	2.00	2.30	2.70

- 2713 FILTER PAPER**, Whatman No. 42 (S. & S. No. 589³, Blue Ribbon), a double-acid-washed paper, similar to No. 40, but much harder and extremely close in texture. On account of its close texture it is recommended for use with the filter pump and as folded filters where possible. Especially adapted for the finest precipitates which tend to pass through the filter paper, such as Barium Sulphate when precipitated in cold solution, and in general for precise analytical work where speed is not important.

Diameter, cm.	7	9	11	12.5	15
Per 100 circles.....	\$1.20	1.70	2.00	2.30	2.70

- 2714 FILTER PAPER**, Whatman No. 43 (S. & S. No. 589⁴, Yellow Ribbon), a double-acid-washed paper, of the same stock as No. 40, but having been subjected to an additional chemical process which renders it fat-free. Especially suited for the recovery of the ether extract in the Roese-Gottlieb Fat Test, and in general for any purposes requiring a fat-free paper.

Diameter, cm.....	7	9	11	12.5	15
Per 100 circles.....	\$1.50	2.20	2.55	2.80	3.60

- 2715 FILTER PAPER**, Whatman No. 44 (S. & S. No. 590), a double-acid-washed paper of thinner substance and lower ash content than the preceding numbers. It will retain the finest precipitates, but is slightly slower in filtration than No. 40. No. 44 is recommended for use when the greatest possible degree of accuracy in quantitative work is required.

Diameter, cm.....	7	9	11	12.5	15
Ash weight per circle					
grams.....	.00003	.00005	.000077	.00001	.00014
Per 100 circles.....	\$1.50	2.20	2.55	2.80	3.60

- 2715a FILTER PAPER**, Whatman No. 50 (S. & S. No. 575), a paper specially hardened by treatment with Nitric Acid. Very tough, will resist great pressure, and retain the very finest precipitates. Can be used repeatedly, the hard smooth surface permitting precipitates to be scraped or washed off without injury to the paper. Especially recommended for use with vacuum. Suitable for very fine precipitates and for filtering corrosive liquids such as Acids and strong Alkalies. Should be used when it is desired to transfer a precipitate without ignition. Widely used for filtering Biological products, as the hardened surface prevents contamination of the filtered product by particles of paper when scraped off. Can be used as a substitute for platinum cones, and as supports for large folded filters to prevent them bursting at the points.

Diameter, cm.....	4¼	5½	7	9	11	12.5	15	18½	24	32	50
Per 100 circles.....	\$0.55	.90	1.20	1.70	2.00	2.30	2.70	3.60	6.10	11.35	20.85

WHATMAN QUANTITY DISCOUNTS

Orders less than \$100.00, list prices.....Strictly Net

Orders amounting to between \$100.00 and \$200.00 list prices.....5%

Orders amounting to over \$200.00.....10%

For institutions of learning we can arrange Special Duty Free Importations of Whatman Filter Papers upon the condition that all necessary Government requirements are complied with. Full information upon request.

- 2715b FILTER PAPER**, Celeritas (S. & S. No. 588), Folded, excellent quality, free from chlorine, folded in such a way as to protect the points from tearing. In boxes of 100 filters.

Diameter, cm.....	12.5	15	18.5	24	32	50
Per box of 100.....	\$1.50	1.80	2.25	3.00	5.00	7.50

- 2715c FILTER PAPER**, Grey, French, Prat-Dumas make, size, 17x22 inches.

Ream, 7.50 quire.....	\$0.40								
Circular, put up in packages of 100 sheets.									
Diameter, cm....	10	12½	15	19	25	33	40	45	50
Per 100 sheets...	\$0.20	.30	.40	.66	.92	1.40	1.72	2.40	3.00

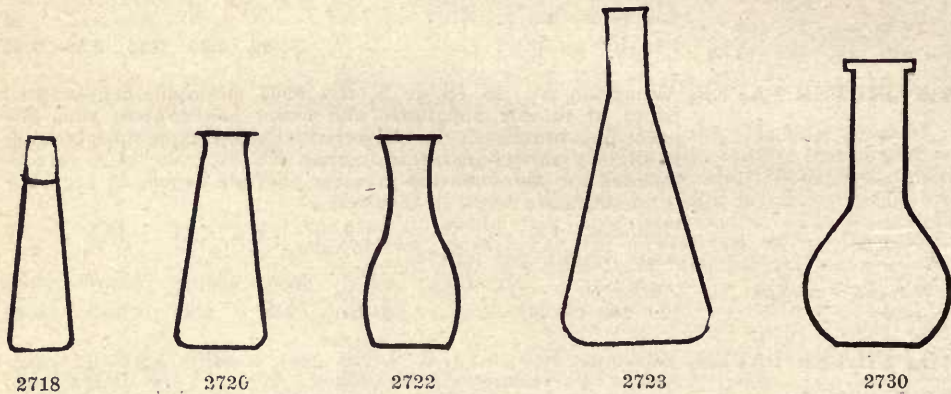
Discounts applying to Whatman Filter Papers

STOCK—Orders less than \$100.00 list value. List prices NET.
Orders of \$100.00 list value. List prices less 5%.
Orders of \$200.00 and over. List prices less 10%.

Special importations of Whatman Paper may be arranged for institutions of learning.

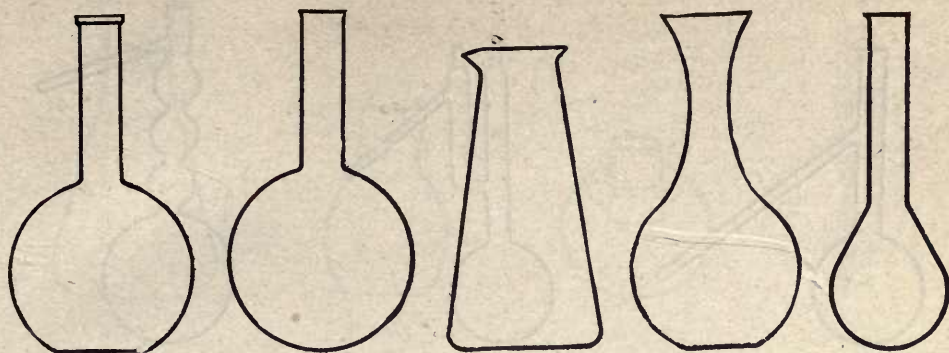
DUTY FREE on Orders less than \$125.00 list value. List prices less 15%.
Orders of \$125.00 list value. List prices less 15% and 5%.
Orders of \$250.00 and over. List prices less 15% and 10%.

FLASKS



2718	FLASKS, Assay, or Parting, conical with ring.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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All Pyrex Glass in original case lots at 10% discount. Special prices in larger quantities purchased at one time.



2738

2740

2744

2746

2748

- 2738 FLASKS, Chemical, flat bottom, heavy ring around mouth to bear tight corking. Non Sol glass.**

Cap., c.c.....	250	500	1000	2000
Each	\$0.30	.37	.54	.77

- 2739 FLASKS, Flat bottom, Pyrex glass, with heavy ring neck.**

Capacity, c.c.....	500	700	1000	1500	2000	3000	6000	12000
To take rubber stopper, No.....	6	6	7	7	9	9	10	10
Number in original case	72	36	36	24	24	12	12	6
Each	\$0.38	.47	.55	.66	.78	.99	1.75	3.30

- 2740 FLASKS, Chemical, round bottom, vial mouth. Non Sol glass.**

Capacity, ounces.....	1	2	4	8	16	32	64
Each	\$0.12	.14	.16	.25	.35	.55	.78

- 2742 FLASKS, Round bottom, Pyrex glass, with vial mouth.**

Capacity, c.c.....	100	150	200	300	400	500	700	1000	1500	2000	3000
To take rubber stopper, No...	2	3	3	4	4	4	7	5	7	9	10
Number in original case..	84	180	144	84	72	48	42	30	24	18	12
Each	\$0.17	.20	.22	.28	.32	.37	.45	.56	.71	.79	1.07

- 2744 FLASKS, Conical, with lip, so-called Beaker Flasks, Nonsol glass.**

Capacity, ounces.....	2	4	8	16	32
Each	\$0.20	.20	.30	.45	.75

- 2746 FLASKS, Copper determination, Nonsol glass, pear shaped, wide mouth.**

Capacity, ounces.....	6	8
Each	\$0.20	.30

- 2748 FLASKS, Kjeldahl, Pyrex glass, with long neck and round bottom.**

Capacity, c.c.....	300	500	800
Outside diameter of neck, mm.....	30	31	35
To take rubber stopper, No.....	5	6	6
Total length, mm.....	298	327	365
Number in original case.....	60	36	36
Each	\$0.28	.37	.45

The 200 C C furnished also in 9½ inch overall length, packed 60 pieces per original case.

The 500 C C furnished also in 9¾ inch overall length, packed 48 pieces per original case.

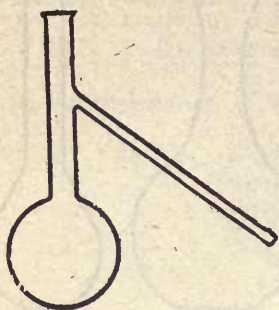
The 800 C C furnished also in 11 inch overall length, packed 36 pieces per original case.

- 2749 FLASKS, Kjeldahl's, Pear shape, of Copper, with extra long necks, for Nitrogen determination.**

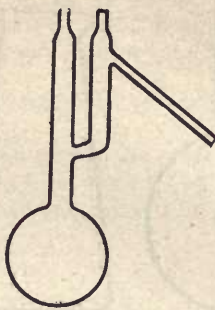
Capacity, 900 c.c., each.....	\$5.00
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- 2749(a) FLASKS, Kjeldahl's, made of heavy copper, 4 inches in diameter, 8½ high, capacity about 1000 c.c. Made especially for the determination of Nitrogen by the Kjeldahl method.**

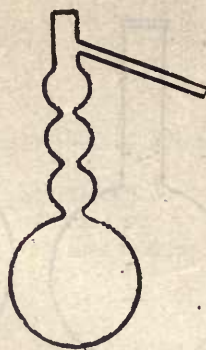
Each	\$4.50
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2750



2753



2756

2750 FLASKS, Distilling, with side neck. Nonsol glass.

Capacity, ounces.....	1	2	4	8	16	32	64
Each	\$0.30	.39	.44	.48	.58	.98	1.48

2752 FLASKS, Distilling, Pyrex glass, with side tube in middle of neck.

Capacity, c.c.....	50	125	250	500	1000	1500	2000	3000
Each	\$0.38	.43	.52	.70	1.00	1.25	1.40	1.95

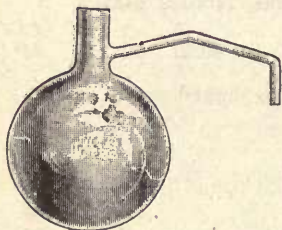
Note:—If specified when ordering, side tube may be located where desired.

2753 FLASKS, Distilling, Claisen's.

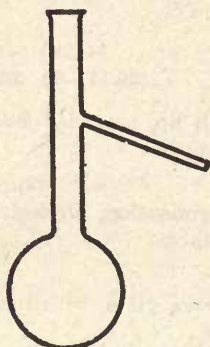
Capacity, c.c.....	60	125	250	500
Each	\$0.55	.65	.75	1.00

2756 FLASKS, Distilling, Ladenburg's, 3 bulbs.

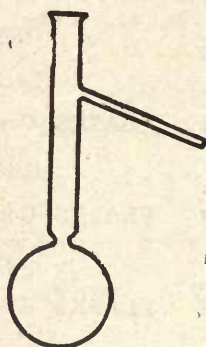
Capacity, c.c.....	100	200	500	1000
Each	\$0.75	1.00	1.50	2.00



2757



2757(b)



2757(d)

2757 FLASKS, For moisture in grains, as used by the Bureau of Plant Industry, U. S. Department of Agriculture. Made of glass.....\$1.00**2757(a) FLASKS, As above, made of copper, with double walls..... 5.00****2757(b) FLASKS, Engler's, distilling, for the distillation of petroleum and crude oil.**

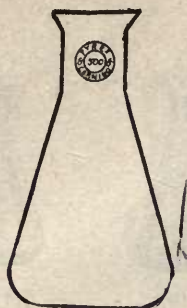
Capacity 125 c.c.....	.40
Capacity 250 c.c.....	.50

2757(c) FLASKS, Engler's, distilling, Pyrex glass.

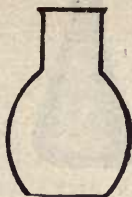
Capacity, c.c.....	100	200	250
Each	\$0.40	.55	.65

2757(d) FLASKS, Hempel's, distilling. Made especially for the distillation of creosote, as used by the Forest Service of the U. S. Department of Agriculture.

Each	\$1.50
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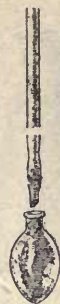
2760



2763



2766



2767

2758 FLASKS, Erlenmeyer's. Non Sol glass.

Capacity, oz.....	2	4	6	8	12	16	24	32	64
Each	\$0.10	.12	.14	.16	.20	.27	.33	.42	.60

Capacity, c.c..	25	50	100	150	200	250	300	500	600	750	1000	1500	2000	3000	4000
No.	00	1	3	4	5	5	6	6	6	7	8	9	10	10	10
Number in original case	360	276	180	252	144	132	132	72	60	48	36	24	24	15	12
Each	\$0.13	.14	.15	.16	.16	.20	.21	.27	.29	.33	.42	.51	.60	.79	1.00

2762 FLASKS, Extraction, Non Sol glass, wide mouth, short neck, for Soxhlet's extraction apparatus; so-called "Carbonic Acid" flasks.

Capacity, ounces.....	1	2	4	6	8
Each	\$0.13	.14	.15	.17	.19

2763 FLASKS, Extraction, Pyrex Glass, flat bottom, with wide mouth and vial neck.

Capacity c.c.....	50	100	150	250	500	750	1000
To take rubber stopper, No.....	6	6	7	8	10	10	11
Number in original case	168	120	108	120	60	48	36
Each	\$0.13	.15	.17	.19	.29	.36	.54

2764 FLASKS, Extraction, of Aluminum. Capacity, 4 oz. Each

\$1.50

2765 FLASKS, Extraction, of Copper. Capacity, 4 oz. Each.....

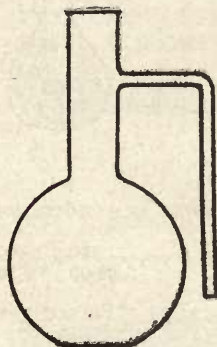
1.50

2766 FLASKS, Extraction, Knorr's, with mercury seal. Capacity, 100 c.c. Each..

.50

2767 FLASKS, Acetylation, for determining Menthol in Oil of Peppermint, etc, with ground-in condensing tube. Capacity about 150 c.c. Length of condensing tube, 1 meter

\$1.75



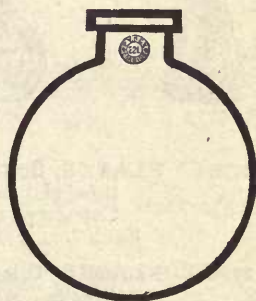
2767(a)



2767(b)



2767(c)



2767(d)

2767(a) FLASKS, Sulphur, flat bottom, with side neck bent at right angle, as used in determining sulphur in iron and steel. Capacity, 500 c.c.....

.75

2767(b) FLASKS, Johnson's Sulphur, of Pyrex glass with heavy vial neck. Used widely for determining sulphur in iron and steel analysis. Capacity, 275 c. c.; neck of size to take No. 6 rubber stopper.....

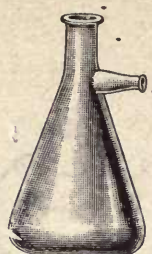
.32

2767(c) FLASKS, Copper.

Capacity, cc.....	250	500	1000	2000
Each	\$2.25	2.50	3.00	4.00



2768



2770



2771



2771(a)



2771(b)

2767(d) FLASKS, Round Bottom, Balloon Form, Pyrex Glass, with short ring neck.

Capacity, cc.....	200	500	1000	1500	2000	3000	5000	12000	22000
To take rubber stopper, No.....	3	6	8	9	10	10	11	12	12
Number in original case.....	144	72	36	24	18	12	6	6	8
Each	\$0.24	.38	.55	.66	.78	.99	1.29	3.00	6.60

2768 FLASKS, Filter, Erlenmeyer form, of extra heavy glass, to withstand vacuum.

Capacity, cc.....	250	500	1000	2000
Each	\$0.45	.65	.80	1.50

2770 FLASKS, Filter, Erlenmeyer form, with side neck, of extra heavy glass.

Capacity, cc.....	250	500	1000	2000	4000
Each	\$0.45	.65	.80	1.50	4.50

2771 FLASKS, Erlenmeyer, with ground in hollow glass stopper.

Capacity, cc.....	125	250	400	500	1000
Each	\$0.75	1.00	1.25	1.50	2.00

2771(a) FLASKS, Erlenmeyer, with ground in hollow stopper and gutter, for determination of the Iodine number, capacity 300 cc.....\$1.50**2771(b) FLASKS, Sy's, for extraction apparatus, with mercury seal, easily cleaned.**

Capacity, cc.....	100	150
Each	\$0.85	1.25



2773



2774



2775



2776



2777

2773 FLASKS, Soil or Crude Fibre, Erlenmeyer shape, with ground in condensing tube of 1 meter length.

Capacity, cc.....	250	500
Each	\$2.00	2.50

2774 FLASKS, Giles, with bulb in neck and two marks, so-called "Percentage Flasks," with glass stoppers.

Graduated at, cc.....	500 & 550	1000 & 1100	2000 & 2200
Each	\$2.00	2.50	4.50

2775 FLASKS, Cassia, for assaying Cinnamic Aldehyde, capacity about 125cc, neck graduated to 6cc in 1/10cc, with glass stopper.....\$2.50**2776 FLASKS, Sugar Flasks, with two marks on neck.**

Graduated at, cc.....	50 & 55	100 & 110	200 & 220
Each	\$0.60	.80	1.20

2777 FLASKS, Sugar, Bates', pear shaped, supplied with funnel top. Graduated according to the requirements of the Bureau of Standards at 100cc....\$1.25



2778



1780



2782

2778	FLASKS, Saccharometric, sugar, Kohlrausch's.						
	Capacity, cc.....	50	100	200	201.2	201.4	
	Each	\$0.60	.80	1.30	1.30	1.30	
2780	FLASKS, Volumetric or liter flasks, volume fixed by mark on neck.						
	Graduated at cc.....	10	20	25	50	100	200
	Each	\$0.25	.30	.40	.50	.60	.75
	Graduated at cc.....	250	300	500	1000	2000	
	Each	\$0.75	.85	1.10	1.40	2.25	
2782	FLASKS, Volumetric or liter flasks, glass stoppered, with one mark on neck.						
	Graduated at cc.	25	50	100	200	250	300
	Each	\$0.75	1.00	1.10	1.25	1.25	1.40
						1.50	2.00
							3.00
2783	FLASKS, Volumetric or liter flasks, glass stoppered, graduated to meet the requirements of the National Bureau of Standards, Washington, D. C.						
	Capacity, cc.....	25	50	100	250	500	1000
	Each	\$1.25	1.50	1.75	2.00	2.50	3.50
2783(a)	FLASKS, Volumetric or liter flasks, glass stoppered, with one mark on neck, standardized by the National Bureau of Standards, Washington, D. C., with Government stamp.						
	Capacity, cc.....	25	50	100	250	500	1000
	Each	\$1.75	2.00	2.25	2.50	3.00	4.25

FORCEPS

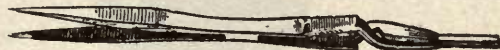


2785



2790

2784	FORCEPS, brass, straight	\$0.25
2785	FORCEPS, brass, ends bent.....	.25
2786	FORCEPS, brass, ends bent, nickel plated.....	.30
2790	FORCEPS, brass, ends bent, with ivory tips.....	1.25



2791

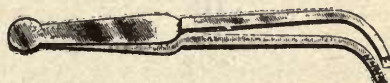


2792

2791	FORCEPS, French form, with platinum tips.....	} At Market Price
2792	FORCEPS, Plattners, nickel plated, with platinum tips..	



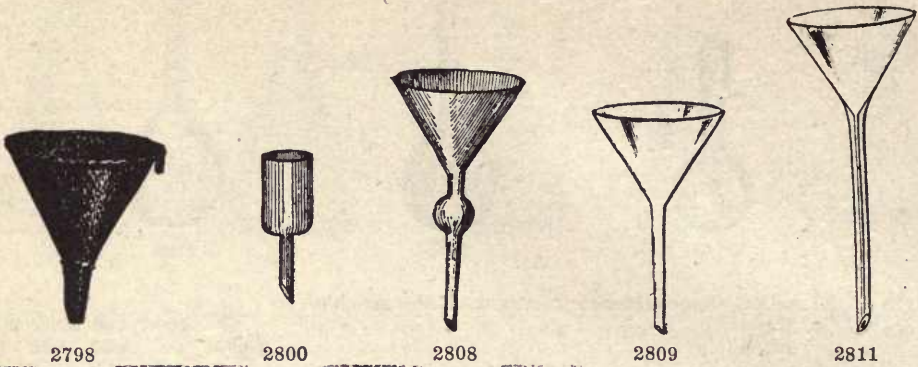
2793



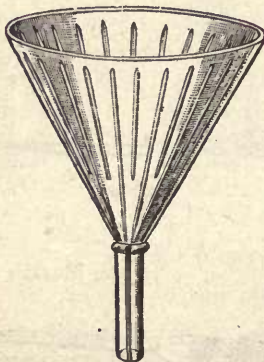
2794

2793	FORCEPS, Steel, Plain.					
	Size, inches.....	4	5	6	7	8
	Price, each.....	\$0.15	.25	.30	.40	.50
2794	FORCEPS, Gooseneck, Nickel-plated, 6 inches long.....					
	FRACTIONAL Distilling Apparatus, see Flasks, Receivers and Tubes.					

FUNNELS



2798	FUNNELS, Agateware.											
	Capacity, pints.....	½	1	2	4	8						
	Each	\$0.40	.50	.60	.75	1.15						
2800	FUNNELS, Carbon Filters or Filter Tubes, of glass.											
	Diameter at top, inches.....	1½	1¾	1½								
	Each	\$0.25	.30	.35								
2808	FUNNELS, Glass, with bulb for filtering through glass wool or absorbent cotton.											
	Diameter, inches.....	4	6	8								
	Each	\$0.50	.75	1.50								
2809	FUNNELS, of best, clearest glass, stems of medium length, angle approximately 60 degrees; the end of the stem ground to a point.											
	Diameter, in..	1½	2	2½	3	3½	4	5	6	8	10	12
	Each	\$0.20	.25	.30	.35	.40	.45	.60	.75	1.00	1.50	2.00
2811	FUNNELS, Bunsen's ground top, stems ground to point, exact angle of 60 degrees. Our Bunsen Funnels will, we believe, please the most particular user. Every Bunsen Funnel sold by us is guaranteed to be accurate and filter rapidly.											
	Diameter, cm.....	4	5	6	7	9	10					
	Length of stem, mm.....	100	125	125	130	130	135					
	Each	\$0.25	.30	.35	.40	.50	.60					

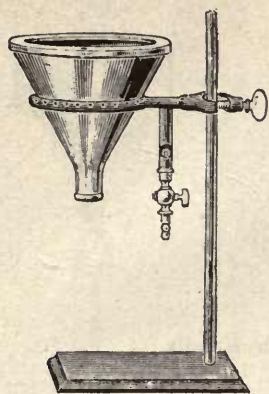


2812



2814

2812	FUNNELS, Glass, ribbed, for rapid filtration.						
	Diameter, inches.....	4½	5	6	7¼	9	10½
	Capacity, ounces.....	4	8	16	32	64 gal.	1
	Each	\$0.20	.25	.35	.50	.80	1.00
2814	FUNNELS, Hard Rubber.						
	Capacity, ounces.....	4	8	16	32	½ gal.	1 gal.
	Each	\$0.50	.60	.75	1.00	1.50	2.25



2815

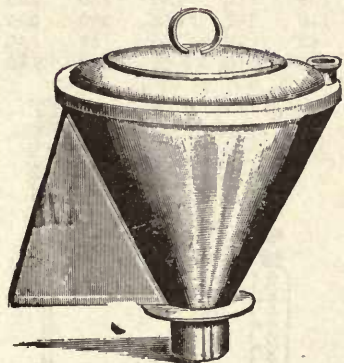


2815(a)

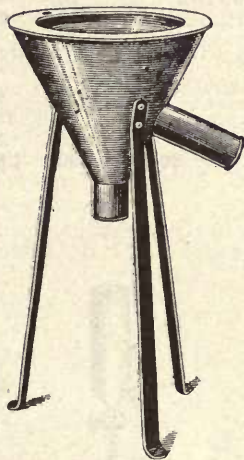


2817

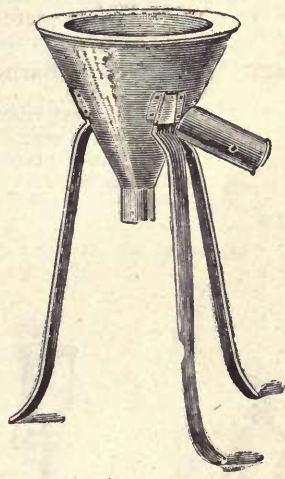
- 2815 FUNNEL, single wall, of copper, suspended in Ring Bunsen Burner, attached to support; size of base, $5\frac{1}{2}$ by $7\frac{1}{2}$ inches, rod 20 inches high.....\$7.50
- 2815(a) FUNNEL, of copper, ribbed, for sugar analysis, diam. 4 inches..... .50
- 2817 FUNNEL, of heavy copper, single wall with coil, for hot water or steam; very desirable for the filtration of inflammable liquid..... 5.00



2817(a)



2818



2818(a)

- 2817(a) FUNNEL, of tin, for hot filtration, double wall, according to Plantamaur.\$4.00
- 2817(b) FUNNEL, same as above, but made of copper..... 5.00
- 2818 FUNNEL, of copper, for hot filtration, according to Dr. Koch, single wall with legs 4.00
- 2818(a) FUNNEL, of copper, for hot filtration, according to Dr. Koch, double wall, with detachable legs..... 6.00

WE MAKE SHEET METAL FUNNELS of Special Design

**Please Submit Sketch of Your
Requirements**



2820



2822



2826



2827

2820 FUNNELS, Porcelain, Straight Opening, Glazed With Handle.

Size No.....	1	2	3
Diameter, mm.....	8	120	175
Each	\$0.30	.60	1.70

2822 FUNNELS, Porcelain, Glazed, With Handle and Perforated Sides.

Size No.....	1	2	3	4	5
Diameter, mm.....	110	130	160	201	260
Each	\$0.70	.90	1.50	1.80	3.25

2826 FUNNELS, Hirsch, with fixed, perforated plate.

Size No.....	000	00	0	1	2	3	4
Diameter, mm.....	50	75	92	103	120	140	163
Height, mm.....	64	82	105	122	140	165	190
Dia. perforated plate, mm....	36	44	57	59	59	59	112
Distance plate from rim.....	10	20	26	34	50	65	38
Each	\$0.60	.75	.90	1.20	1.50	2.10	2.70

2827 FUNNELS, Buchener, with fixed, perforated plate.

Size No.....	0	1	2	2a	3	4	4a	5
Diameter, mm.....	48	59	85	108	112	150	160	200
Height, mm.....	81	85	135	140	167	215	200	255
Distance plate from rim.....	20	25	38	43	33	40	56	49
Each	\$0.75	.90	1.50	1.95	2.10	3.60	4.20	5.40



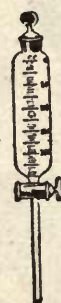
2828



2829



2830



2832



2833

2828 FUNNELS, Separatory, conical, Squibb's, with glass stopper.

Capacity, cc.....	125	250	500
Each	\$2.50	3.50	4.00

2829 FUNNELS, Separatory, bell shape, 50 cc.....\$2.50**2830 FUNNELS, Separatory, cylindrical.**

Capacity	60	125	180	250
Price, each.....	\$1.75	2.25	2.50	3.00

2832 FUNNELS, Separatory, cylindrical, graduated to 100 cc., with glass stopper.

Capacity	60	125	250	500	1000
Price, each.....	\$2.50	3.75	5.50	7.50	9.00

2833 FUNNELS, Separatory, as above, not graduated.

Capacity	60	125	250	500	1000
Price, each.....	\$1.50	1.75	2.25	3.00	4.00



2834



2835



2836



2836(a)



2836(b)



2836(c)

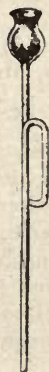
- 2834 FUNNELS, Separatory, globular, with glass stopper and long stem.**
 Capacity, ounces..... 1 2 4 8 16 32 64
 Each\$1.50 1.75 2.25 2.75 3.25 4.50 7.50
- 2835 FUNNELS, Dropping, Walter's, for obtaining single drops. Capacity, 60 cc.**
 Each\$3.00
- 2836 FUNNELS, Separatory, globular, with glass stopper, of heavy glass.**
 Capacity 250 500 1000 2000 4000
 Each\$3.50 4.00 5.50 8.00 12.50
- 2836(a) FUNNELS, Separatory, for the estimation of moisture in creosoted woods**
 as used by the Forest Service of the U. S. Department, see circular
 No. 134.....\$4.00
- 2836(b) FUNNELS, Shaking, for the determination of Phenol in Creosote, as**
 used by the Bureau of Animal Ind., U. S. Department of Agriculture,
 see Bulletin No. 107..... 5.50
- 2836(c) FUNNELS, Separatory, for sulphonation test of Creosote, as used by**
 the Forest Service of the U. S. Department of Agriculture..... 4.50



2839



2840



2842



2844



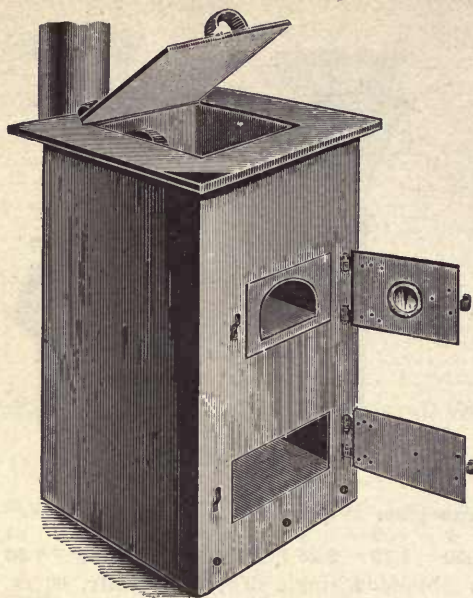
2846



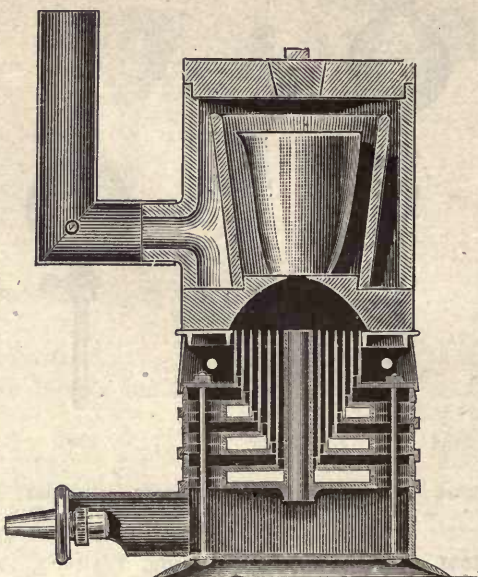
2848

- 2839 FUNNEL-TUBES, Conical top, light glass.**
 Length, inches 10 12 15 18
 Each\$0.12 .15 .20 .25
- 2840 FUNNEL, Thistle top, thin blown glass.**
 Length, inches 10 12 15 18
 Each\$0.10 .15 .20 .25
- 2842 Safety Tubes, plain, without bulb, thistle top.....\$0.20**
- 2844 Safety Tubes, one bulb in the bend, thistle top..... .25**
- 2846 Safety Tubes, two bulbs in the bend, thistle top..... .35**
- 2848 Vogel's, with delivery tube fused on..... .75**

FURNACES

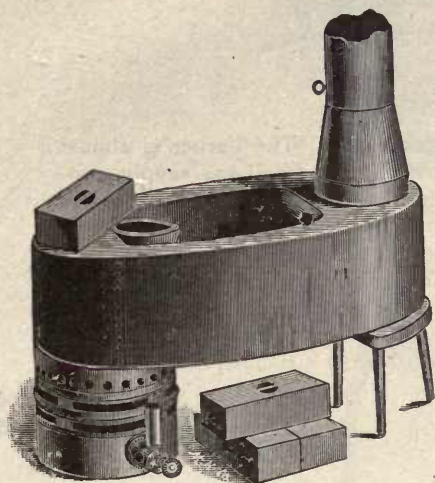


2854

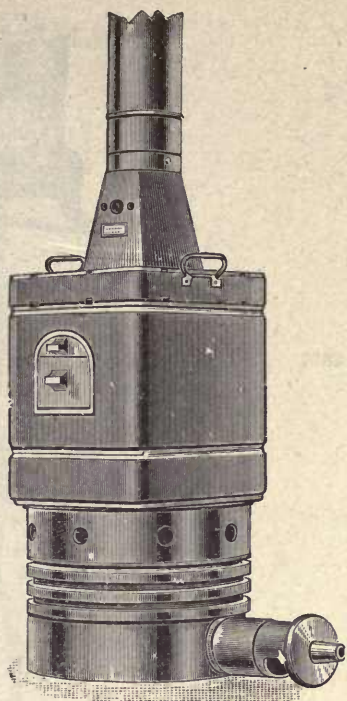


2864

- 2854 FURNACE, Brown's Assay.** Size, 29 in. high, 16 in. wide by 14 in. deep; supplied with J Muffle, 4x6x12 in. The furnace burns charcoal or coke. Crucible fusions can be made in the open fire on top of the muffle, working through the feed door on top. The sectional fire clay lining is bound with heavy sheet iron. All doors and hingers malleable iron lined with asbestos. This is the most satisfactory prospecting furnace on the market, and, where necessary to carry on pack mules, any portion of the fire clay lining may be removed to divide the weight. Weight, complete, packed for shipment, with one muffle, 155 pounds\$25.00
- 2856 FURNACE, Brown's Assay.** Same as above, but larger, supplied with LL. Muffle, 5 $\frac{3}{4}$ x9x15; size, 33 in. high, 22 in. wide by 19 in. deep. Weight complete, packed for shipment, 310 pounds. This is an extremely satisfactory furnace. Price..... 45.00
- 2864 FURNACE, Fletcher's Crucible, for gas.** This furnace takes crucibles up to 4x3 $\frac{1}{2}$ inches, holding 6 pounds, and with $\frac{1}{2}$ -inch gas pipe, and a pressure of gas equal to 2 inches of water, supplying about 50 feet per hour, melts a crucible of gold, silver or brass in 30 minutes, and as much cast iron in 60 minutes. It is made in a substantial manner, and is recommended to manufacturing jewelers, reducing photo waste, etc. The lid never gets too hot to be lifted by the handle; with 6 feet of pipe, crucible and tongs, complete, each..... 20.00
- Prices of separate parts—**
- | | |
|--------------------------------------|-------|
| Plumbago Crucibles, No. 3, each..... | 1.00 |
| Plumbago Cylinders, No. 15..... | 2.00 |
| Clay Crucibles, No. 3..... | .25 |
| Clay Cylinders, No. 15..... | .50 |
| Fire-clay Casing | 3.50 |
| Lid | 2.00 |
| Grate | 1.50 |
| No. 15 Burner | 12.00 |
| Wire Gauze Rings, each..... | .25 |
- Furnace may be operated with illuminating gas, natural gas or gaso-line gas without alteration.



2866

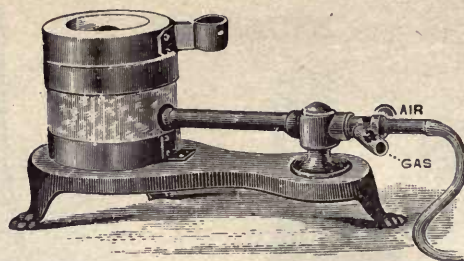


2868

- 2866 FURNACE, Fletcher's Monitor.** A form of Gas Assaying Furnace, suggested by Walter Lee Brown. In this furnace the flame rises from the burner, shown on the left of the engraving, and passes horizontally through the body of the furnace to the chimney. The exterior dimensions are 20 inches long, 7 inches wide, and $5\frac{1}{2}$ inches deep. As there is no direct heat under the floor of the furnace, a platform is furnished on which scorifiers or cupels are placed. The heat passing under as well as over the platform, the articles placed thereon are heated quickly and evenly. The Monitor, as represented in cut. \$20.00

Prices of separate parts—

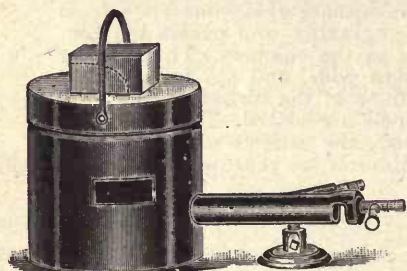
- | | | |
|-------------|---|---------|
| | Fire-clay Slabs for covers, each..... | \$ 0.50 |
| | Body of Furnace | 8.50 |
| | Platform | .15 |
| | Supports for Platform, each..... | .05 |
| | Tripod | .50 |
| | No. 16 Burner | 9.00 |
| | Chimney Pipe, per length..... | .35 |
| 2868 | FURNACE, Fletcher's Muffle, a gas furnace for assaying, enameling, and all purposes where exact temperatures are required, not exceeding the melting point of copper.
Size No. 3, with No. 15 burner. Inside muffle space, $3\frac{1}{2} \times 4 \times 2\frac{3}{8}$ in. high. Requires $\frac{1}{2}$ -in. bore gas pipe and tap. Clay parts, $7\frac{3}{4} \times 7\frac{3}{4} \times 8$ in. Inside space, $5\frac{1}{4} \times 5\frac{3}{4} \times 5\frac{1}{4}$ in. high. From table to top of lid, 16 in. Weight, as illustrated, 60 lbs..... | 20.00 |
| 2870 | FURNACE, Fletcher's Muffle. Size No. 4, with No. 4 burner. Inside muffle space, $3\frac{7}{8} \times 5\frac{7}{8} \times 3$ in. high. Requires $\frac{3}{4}$ -in. clear bore gas pipe and tap. Clay parts, $10 \times 9 \times 11$ in. Inside space, $7\frac{1}{2} \times 6\frac{1}{2} \times 5\frac{3}{4}$ in. high. From table to top of lid, $19\frac{1}{2}$ in. Weight, as illustrated, 88 lbs..... | 26.00 |
| 2872 | FURNACE, Fletcher's Muffle. Size No. 5, with No. 5 burner. Inside muffle space, $4\frac{7}{8} \times 6\frac{5}{8} \times 4$ in. high. Requires 1-in. pipe and tap. Clay parts, $11\frac{3}{4} \times 10\frac{3}{4} \times 14$ in. Inside space, $8\frac{3}{4} \times 7\frac{3}{4} \times 6\frac{3}{4}$ in. high. From table to top of lid, 23 in. Weight, as illustrated, 145 lbs..... | 40.00 |
| 2874 | FURNACE, Fletcher's Muffle. Size No. 6, with No. 6 burner. Inside muffle space, $6 \times 8\frac{1}{2} \times 4\frac{7}{8}$ in. high. Requires 1-in. clear bore gas pipe and tap. Clay parts, $14 \times 15\frac{1}{4} \times 17\frac{1}{4}$ in. Inside space, $10\frac{1}{4} \times 9\frac{1}{2} \times 8\frac{3}{4}$ in. high. From table to top of lid, $27\frac{1}{4}$ in. Weight, as illustrated, 225 lbs..... | 50.00 |



2877

- 2877 FURNACE**—Crucible, with improved gas burner. The burner is almost noiseless in its action, and works with a very small gas supply, producing much more economical results than any gas burner heretofore used for the purpose of heating furnaces. Gas supply pipe required, $\frac{3}{8}$ inch. The amount of air and gas used by this furnace is very small. Care should be taken that the right proportion of each is used. A steady blast of air will give the best results. No. 9a or No. 10a Foot Blower is recommended for this furnace; takes No. 00 Crucible. No. 40a Crucible Furnace, with one No. 00 Crucible, without Foot

Blower	\$5.00
Extra Burners	2.25



2878-80

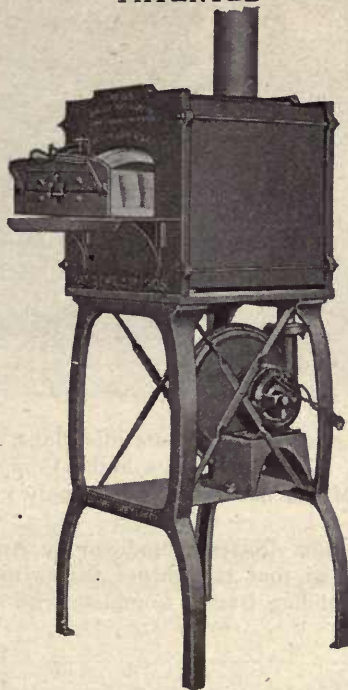


2882

- 2878 FURNACE**, Fletcher's Perfected Injector gas furnace, for metallurgists, jewelers, chemists, manufacturers of artificial gems, and other purposes where an ordinary furnace is useless or unreliable. Takes No. 1 crucible, holding 2 pounds of metal. Without foot-blower....\$ 6.00
- 2880 FURNACE**, Fletcher's Perfected Injector, taking No. 3 crucible holding 6 pounds of metal. Without foot-blower..... 8.50
- 2882 FURNACE**, Fletcher's Perfected Injector. Combined Crucible and Muffle Furnace, for gas. This is supplied with muffle fittings, and can be used either as a crucible or muffle furnace. The body of the furnace is large enough to receive a No. 6 crucible, holding 12 pounds of metal. The cover has a projection one side, which reduces the height of the inside of the furnace to the proper size to receive the muffle or a No. 3 crucible. By reversing the cover, a No. 6 crucible may be used. Takes a muffle $3\frac{1}{2} \times 2\frac{7}{8} \times 6\frac{1}{4}$ inches. Complete, without foot-blower 14.00
Use the No. 9B or 10 B foot-blower with this furnace. The gas supply must be from a $\frac{1}{2}$ -inch or, better, a $\frac{3}{4}$ -inch pipe.

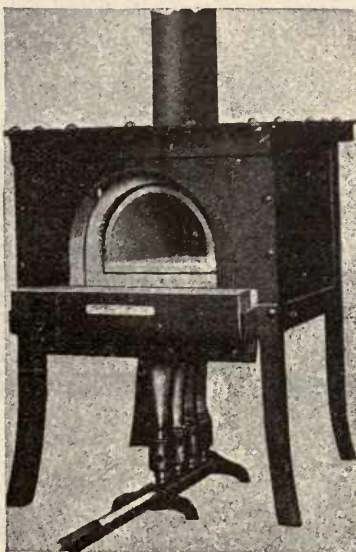
FURNACE CASE GAS MUFFLE

PATENTED



2883

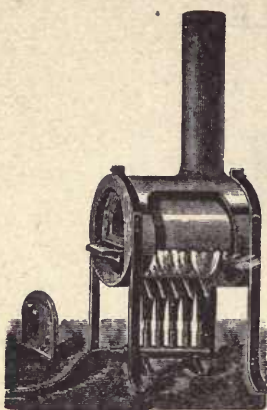
2883 FURNACE Case Gas Muffle, Patented. Prices include furnace, iron stand, motor, blower and burner. In fact, the whole equipment complete for running. Floor space dimensions signify all space necessary for complete installation of furnace in running order. Size of muffle, 10x16x5½ in. Capacity, fifteen 15-gramme, or twelve 20-gramme crucibles. Shipping weight, 620 lbs.; iron stand, 140 lbs.; motor blower, 150 lbs.; floor space, 21x26 in.



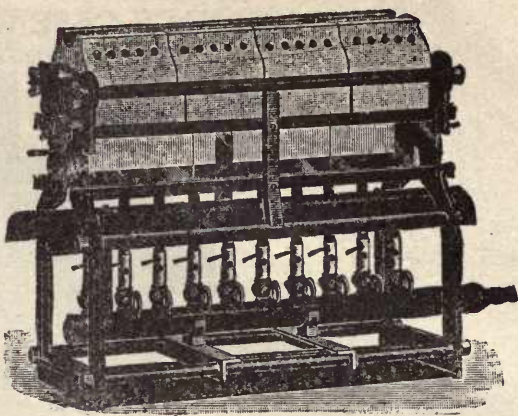
2885

2885 FURNACE, Muffle. Highest heat can be obtained without using blast burners. Inside measure of muffle, 7x4½x3 inches high. Complete with our No. 2135t four Meker burner No. 3 in one row.....\$30.00

FURNACE, Muffle. Same as No. 2885, but larger. Inside measurements of muffle, 9x6x4 inches high. Complete with six Meker burners No. 4 on one supply pipe 40.00



2887

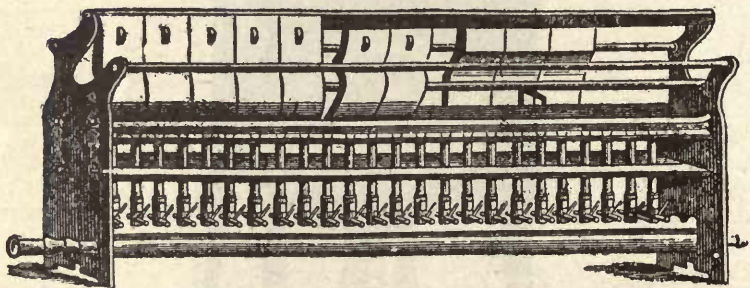


2909(a)

2887 FURNACE, Wiesnegg's. For ash determinations, etc. Inside measurements of muffle, 5¾x4x2¼ inches high. Complete with one muffle and four No. 4 Meker burners on one supply pipe.....\$30.00

2909(a) FURNACE, Combustion, Glaser's, modified by Anschuetz and Kekule, with mica plates so that the burner flames may be watched. The burners are on a sliding frame. Complete with clay parts.

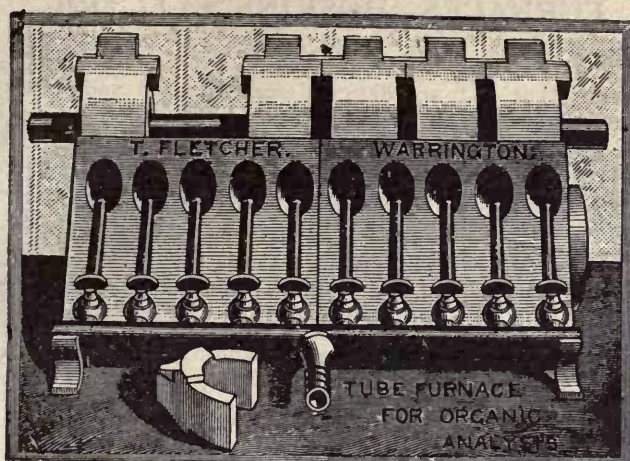
Length, inches	15	23	30	36
Number of burners	10	16	21	26
Each	\$30.00	40.00	50.00	60.00
Extra Top Clays for above, each.....				.25
Extra Side Clays for above, each.....				.25
Extra Gutters, each .....				.15



2910

2910 FURNACE, Combustion, Bunsen, each burner with separate stopcock and air regulator. Complete with clay parts.

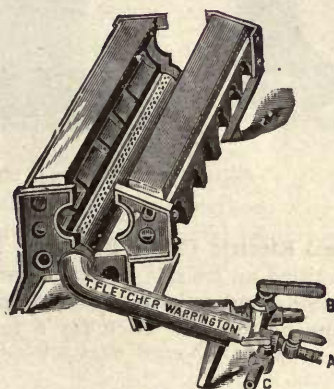
Length, inches	14	10	25	31
Number of burners	10	15	20	25
Each	\$18.00	24.00	30.00	36.00
Extra Clay Tiles for above.....				.15
Extra Clay Gutters for above.....				.15



2914

- 2914 FURNACE, Combustion, Fletcher's.** The burners are on the outside of the furnace in front and are clear from falling dirt. There is no iron work to rust, brass being the only metal used in the furnace.

Length, inches	12	24
Each	\$30.00	50.00
Extra cover blocks, each		\$0.50



2915

- 2915 FURNACE, Combustion, Fletcher's, for very high temperatures.** Heats a 1-inch iron tube to softness in ten minutes, requiring for this purpose a foot blower or other blast. It may also be used without blast, when ordinary high temperatures are desired.

Length, inches	12	18	24
For blast, with adjustable flame length	\$15.00	20.00	22.50
As above, without adjustable flame length	13.00	18.00	20.00

FURNACES—HOSKINS' ELECTRIC
TYPE FD

These furnaces, Type FD, are designed for industrial and laboratory purposes. Their construction eliminates all the shortcomings commonly found in wire-wound electric furnaces. Attention is particularly called to the fact that all parts of this furnace which require renewals are very easily accessible and can be replaced by the operator himself. No part of this furnace need be returned to the factory when in need of repairs.

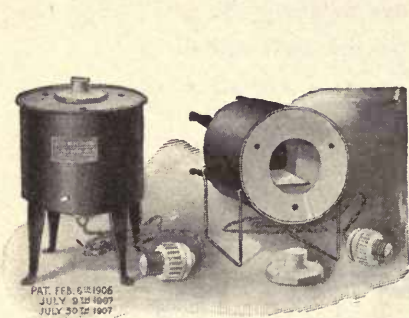
The heating unit is surrounded by bonded kieselguhr, backed up with asbestos and magnesia slabs. It is believed that this insulation is the most efficient that is available and it is responsible for the low power consumption of this FD line.

The door of the furnace is of the sliding type and has an adjustable counterbalance, which causes the door to remain open at any desired point or close automatically.

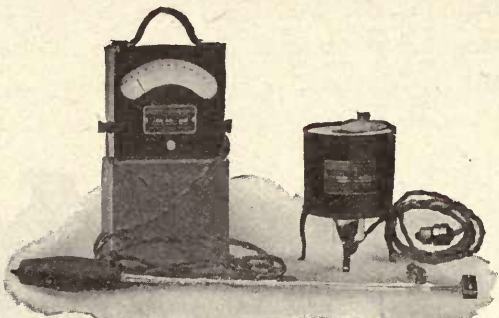
Construction—The heating element in these furnaces is of heavy Chromel "A" wire, wound in spiral coils. The refractory, around which this wire is wound, has spirally built ribs on its surface, which give the walls of the heating-chamber a greater strength, and at the same time the spaces between these ribs act as grooves in which the wire is wound and is thus automatically and properly spaced.

Temperature—The maximum safe operating temperature of the FD Furnace is 1830° F. (1000° C.). The minimum temperature that can be maintained with the standard rheostat is about 900° F. (480° C.). With special rheostats, they can of course be operated at lower temperatures, with the exception of the Tube Furnace.

Operation—Hoskins Furnaces, Type FD, are built for 110 or 220 volt circuits, alternating and direct current. Special windings will be made for any voltage between 100 and 300. All styles require the use of a rheostat, which is the only auxiliary apparatus required.



2916(a)

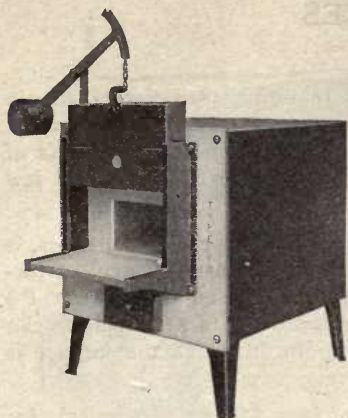


2916(b)

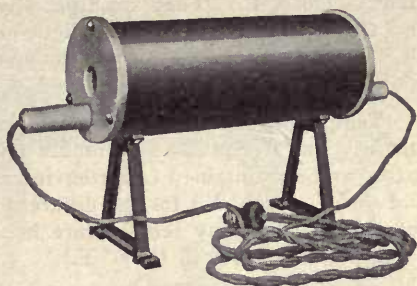
2916(a) FURNACE—Hoskins' Electric (Type FD), No. 101. Crucible chamber style, as shown; may be tilted on its side and used for a small muffle. Particularly for making crucible combustions, incinerations and melting alloys within temperature range of furnace. Includes 6 feet twin connector-cord and attachment plug.

Type and Number	Size of Heating Chamber	Furnace Only	Furnace and Rheostat	Refractory without wire	Chromel Wire for winding
FD-101.....	2" dia. x 2½" deep	\$20.00	28.50	1.00	1.50
103.....	4" dia. x 4 " deep	40.00	52.00	3.00	6.00
104.....	5" dia. x 5 " deep	60.00	72.00	5.00	8.00

2916(b) Recalescent Outfit—The apparatus shown in 2916(b) is used for determining the "critical points" of high carbon steels. It consists of Hoskins Type FD-101 electric furnace, with controlling rheostat, and Type PA Portable Meter and thermo-couple Type P-402, complete with handle and 10 feet of flexible leads.....\$74.50



2916(c)



2916(d)

2916(c) FURNACE, Hoskins' Electric (Type FD), Muffle chamber style. (See general description under Type FD, particularly for ash determinations, ignition of precipitates, incinerations, fusions, combustions; for enameling, hardening and annealing of small metal parts.) Included with each furnace is a six-foot twin connector cord with attachments.

Larger Sizes—The sizes designated by FD-206 and 207 are equipped with an iron stand, which puts the furnace shelf about 40 inches above the floor. The FD-206 and 207 are wound with three parallel circuits, the rheostat being in one of them. The three circuits allow very close temperature control, any temperature between that of the room and 1000° C. being easily maintained.

Type and Number	Size of Heating Chamber W x H x L	Furnace Only	Furnace and Rheostat	Refractory without wire	Chromel Wire for winding
FD-201	3 $\frac{1}{8}$ " x 2 $\frac{1}{2}$ " x 7"	\$ 45.00	55.00	6.00	5.00
202	4 $\frac{1}{4}$ " x 3 " x 10"	60.00	72.00	9.00	8.00
203	5 $\frac{1}{4}$ " x 3 $\frac{3}{4}$ " x 12"	80.00	96.00	12.50	13.00
204	7 $\frac{1}{2}$ " x 5 $\frac{1}{4}$ " x 14"	110.00	137.00	18.50	19.00
206	12 " x 8 " x 19"	285.00	312.00	27.00	30.00
207	12 " x 8 " x 26"	340.00	390.00	36.00	45.00

2916(d) FURNACE, Hoskins' Electric Combustion, for rapid determination of carbon contents of steels by the direct method. The fact that these furnaces are in use in the largest and busiest steel laboratories should convince you that they are proving entirely satisfactory.

Type and Number	Size of Heating Chamber	Furnace Only	Furnace and Rheostat	Refractory without wire	Chromel Wire for winding
FD-302	1 $\frac{1}{4}$ " dia. x 12" long	\$25.00	33.50	3.00	3.50

2916(e) FURNACE, Multiple Tube (Type FD-235). This furnace fills the same purpose as the FB-235. They differ in their type of heating elements. In this furnace five carbon combustions can be run simultaneously, at one-fifth the attention, about one-third less cost, in one-third the space and lower up-keep cost, compared with five single tube furnaces. Also built in the heavier FB Type for continuous service day and night.

Type and Number	Size of Heating Chamber	Furnace Only	Furnace and Rheostat	Refractory without wire	Chromel Wire for winding
FD-235	5 holes, 1 $\frac{1}{4}$ " d. x 12" l.	\$80.00	96.00	13.00	13.00

TYPE FB—FURNACES

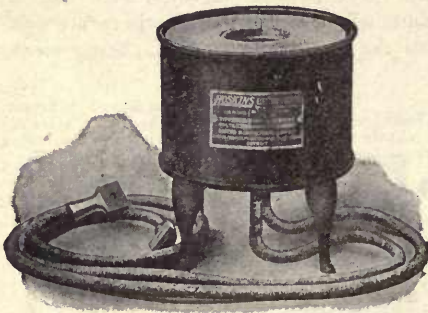
110-220-440 VOLTS

Hoskins Type FB Electric Furnaces are for work requiring temperatures up to 1100° C. (2000° F.). They are especially adapted to heavy duty or continuous operation, and are capable of twenty-four-hour-per-day service if required. The heating units of all Type FB Furnaces can be removed and replaced by the operator within a few minutes.

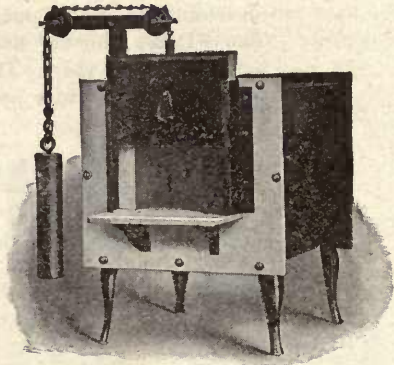
Temperature—The maximum working temperature of all Type FB Furnaces is 1100° C. (2000° F.). The minimum temperature at which the rheostat-controlled furnaces can be maintained (after having come up to heat) varies between 316° C. (600° F.) and 536° C. (1000° F.) for the different designs. The Types FB 204 to 235 inclusive can be maintained at any temperature between that of the room, in which the furnace is operating, and 1100° C. (2000° F.).

Operation—Type FB Furnaces operate on low voltages (10 to 67.5 volts), for which reason they are best adapted for use on alternating current circuits in connection with a transformer. They are regularly supplied for use on 110, 220 or 440 volt, 25 or 60 cycle lines, but can be supplied for other voltages and cycles at prices which will be quoted on application. Temperature regulation of the Types FB 204 to 235, inclusive, is by means of regulating transformers; the types of smaller power in-put are controlled by means of rheostats.

Power Consumption—None of the furnaces described in this bulletin, of course, draws the full load except when heating up. Once up to heat, they operate on a greatly reduced current, in some cases less than half the maximum.



2916(f)



2916(g)

2916(b) FURNACE, Hoskins' Electric (Type FB). Crucible chamber style. Especially adapted to use in analytical laboratory work.

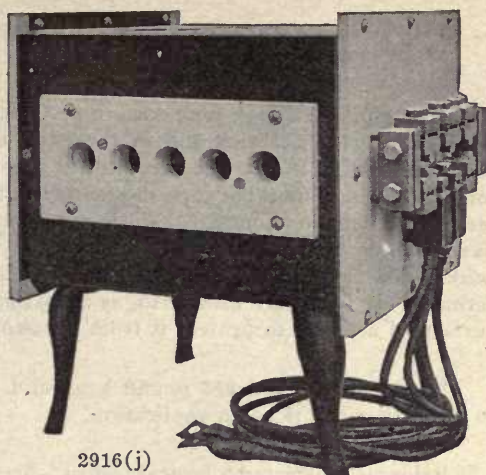
Type and Number	Size of Heating Chamber	Furnace Only	Rheostat	Transformer		Furnace and Complete Equipment	
				60 cycle	25 cycle	60 cycle	25 cycle
FB-102	2" dia. x 2½" deep	\$25.00	12.00	26.00	40.00	63.00	77.00
105	4" dia. x 6 " deep	60.00	16.00	45.00	62.50	121.00	138.00

2916(g) FURNACE—Hoskins' Electric (Type FB). Muffle chamber style (see general description under Type FB). Particularly for ash determinations, ignition of precipitates, incinerations, fusions, enameling, hardening and annealing, melting metals and alloys and a great variety of other uses.

Type and Number	Size of Heating Chamber	Furnace Only	Rheostat	Transformer		Furnace and Complete Equipment	
				60 cycle	25 cycle	60 cycle	25 cycle
	W x H x L						
FB-202	4¼"x3"x 9 "	\$ 90.00	16.00	52.50	72.50	158.50	178.50
204	7¾"x5"x12½"	125.00	None	157.50	197.50	282.50	322.50
205	13 "x5"x12½"	210.00	None	180.00	225.00	390.00	435.00
206	12 "x8"x19 "	285.00	None	234.00	280.00	519.00	565.00
207	12 "x8"x26 "	340.00	None	272.50	332.50	612.50	672.50
208	12 "x8"x33 "	400.00	None	310.00	385.00	710.00	785.00



2916(h)



2916(j)

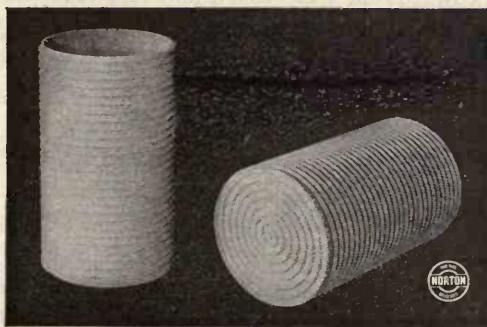
2916(h) FURNACE—Hoskins' Electric (Type FB 302). Tube chamber style. (See general description under Type FB).

Type and Number	Size of Heating Chamber	Furnace Only	Rheostat	Transformer		Furnace and Complete Equipment	
				60 cycle	25 cycle	60 cycle	25 cycle
FB-302	1¼" dia. x 11" long	\$30.00	12.00	26.00	40.00	68.00	82.00

2916(j) FURNACE, Multiple Tube Combustion Furnace (Type FB-235). This furnace is of great convenience and economy where a large number of carbon determinations are to be made, using the direct combustion method. Five carbon combustions can be run simultaneously, and in approximate terms, at one-fifth the attention, one-third less space and correspondingly lower up-keep cost than that represented by five single tube furnaces of the same capacity.

The combustion tubes are heated by direct radiation from the "hair-pin" heating units, between which the tubes lie. Temperature regulation is accomplished by means of a regulating transformer. This furnace is also made in the FD type. See No. 2916(e).

Type and Number	Size of Heating Chamber	Furnace Only	Rheostat	Transformer		Furnace and Complete Equipment	
				60 cycle	25 cycle	60 cycle	25 cycle
FB-235	5 holes, 1¼" d. x 12" l.	\$125.00	None	157.50	197.50	282.50	322.50



2916(k)

2916(k) FURNACE CORES, Alundum. For the construction of small wire resistance electric furnaces Alundum refractory cores meet the criteria of the most efficient material for this purpose. The resistor should be spiralled and wound and then embedded in Alundum cement. Thus, fully protected, the wire does not corrode under the most severe conditions, since the Alundum mixtures are chemically inert. In addition to this the core has high heat conductivity and does not become an electrical conductor even at the highest temperatures obtained in the furnace.*

Those listed below we aim to carry constantly in stock. Special sizes and styles made to order.

No.	6917	6271	6916	6366	*6597	*6601
Bore, inches	1	1½	2	3½	3	5
Depth, inches	10	12	10	5	7	9
Pitch, inches	1/9	½	1/9	½	½	½
Each	\$3.75	4.00	4.00	4.00	4.00	6.00

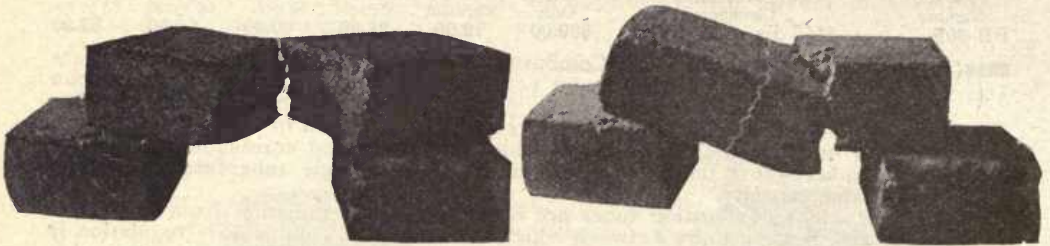
*One end closed.

FURNACE CEMENT—HYTEMPITE

Hytempite is a high temperature fire brick cement which has proven of great value in the laying of firebrick and in the general repair of all types of furnaces, retorts, ladles and so forth. It is a scientifically compounded refractory plastic material and forms a lasting union between the materials to be joined, retaining its strength regardless of the heat to about 3100° F. It is better than fire clay because fire clay and water has no binding strength. It does not loosen with expansion or contraction. Hytempite withstands the cutting action of the flames and is especially recommended for oil furnaces. It is largely used, also, as a coating or wash or to smoothen and harden the surface of a lining to protect it from abrasion.

In 25, 50, 100 and 225 pound kegs and in barrels of 800 pounds. Also furnished in ton lots with prices on application.

Below is illustrated a typical test of a firebrick broken, repaired with HYTEMPITE and then re-broken. Note the last illustration, showing location of new fracture.



The Break (see note)

The Test (see note)

NOTE.—The brick illustrated was broken and repaired with HYTEMPITE, subjected to a high temperature, and upon being tested fractured as shown, proving the repair stronger than the brick structure.

Prices on application.

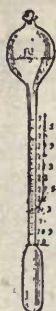
2916(e) FURNACE CEMENT. Alundum cement is recommended for use in connection with Alundum muffles, cores, and wherever a refractory cement with high thermal conductivity is desirable. It has the same general properties as the refractory article and is furnished in the form of a dry powder, which, when mixed with sufficient water to make a thick paste, is ready for application. The material should be allowed to dry and finally heated to a good red heat. In burning, the heat should be raised as high as possible, as this will give the cement a body similar in character to the refractory article.

Price in 1-lb. lots. Per lb.....	\$0.30
Price in 5-lb. lots. Per lb.....	.15
Price in 25-lb. lots. Per lb.....	.10

Prices for larger quantities on application.



2917



2918



2918(b)

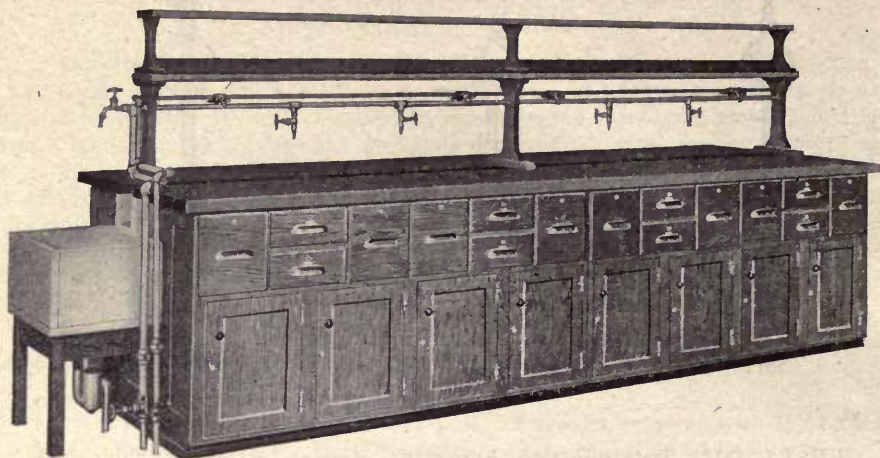
- 2917 FUSEL OIL—Determination Apparatus, Rose's, for 20 c.c. chloroform and 100 c.c. alcohol, graduated in 1/10 c.c.....\$5.00
- 2918 FUSEL OIL—Determination Apparatus, Rose-Herzfeld, for 20 c.c. chloroform and 100 c.c. alcohol, graduated in 1/20 c.c..... 5.00
- 2918(a) FUSEL OIL—Determination Apparatus, as above, for 50 c.c. chloroform and 250 c.c. alcohol, graduated in 1/20 c.c..... 6.50
- 2918(b) FUSEL OIL—Determination Apparatus, Bromwell's, with stop-cock and glass stopper. See Bureau of Chem. Bulletin No. 107 of U. S. Department of Agriculture 6.75

LABORATORY FURNITURE

The laboratory is becoming more and more a factor in education, in the profession, and in the trades. We furnish laboratory furniture not only for educational institutions, but for private experimental and clinical laboratories, such as meet the needs of physicians, commercial chemists and pathologists. We use the best grade of lumber in the manufacture of our furniture. It is kiln dried by the most modern process known.

We furnish all the plumbing complete to the floor line ready to be screwed together and connected. Plans showing the exact location of the different outlets should be obtained before the floor pipes are laid. All sinks and gutters furnished in connection with our laboratory furniture are made from 1¼-inch soapstone. This stone has no equal. It will withstand the action of acid better than any other known substance.

While it is impossible to list all types of Laboratory Furniture we list at least representative ones of Laboratory Tables for Students' and Professors' use for Bacteriological and Industrial purposes and Chemistry Fume Hoods and Balance Tables. We also are capable of furnishing Museum Cases and Cabinets of various kinds, for Funnel and Burette Supports, etc. (See under alphabetical classification throughout the catalog.)



2918(c)

STUDENTS' CHEMISTRY LABORATORY TABLE

ARRANGED TO ACCOMMODATE 16 STUDENTS WORKING IN
SECTIONS OF 8

This table has proved to be one of the most practical for average chemical work. A gutter runs the full length of the table and drains into the sink at the end, as shown in illustration. All the plumbing is exposed and furnished complete to the floor line. This table gives each student one large and one small drawer and one cupboard. We furnish the table in any length required.

SPECIFICATION

SIZE—12' long, 4' wide, 3' high.

TOP—Soapstone $1\frac{1}{4}$ " thick, or birch $1\frac{3}{4}$ " thick. When wood top is furnished, it is treated acid proof.

GUTTER—Soapstone or lead lined, draining into sink at end of table, $5\frac{1}{2}$ " wide x 2" deep in upper end, slanting down to 5" at the sink.

SINK—Soapstone, $10\frac{1}{2}$ "x14"x18", equipped with standing removable overflow and extra heavy lead waste trap.

WATER—Four nickel plated compression water cocks with detachable hose nipples. By removing the detachable hose nipples, a Richard's aspirator can be attached. We also furnish one $\frac{3}{8}$ "x $\frac{1}{4}$ " reducer for the use of a Chapman aspirator. The end water cock is threaded for regular $\frac{3}{4}$ " hose connection.

GAS—Four two-way gas hose cocks, eight outlets. Water and gas plumbing is complete to floor line.

RE-AGENT SHELVES—Made with retaining rims, and are treated acid proof.

DRAWERS—Lap front, in order to exclude dust as much as possible.

DOORS—Panel and lap front.

LOCKS—Forty-eight master keyed mortise locks in sets of three. This arrangement gives each student one large drawer $15\frac{1}{2}$ "x9"x9 $\frac{1}{2}$ " deep, one smaller drawer $15\frac{1}{2}$ "x11"x4" deep, and one cupboard $15\frac{1}{4}$ "x17"x18", with shelf in center.

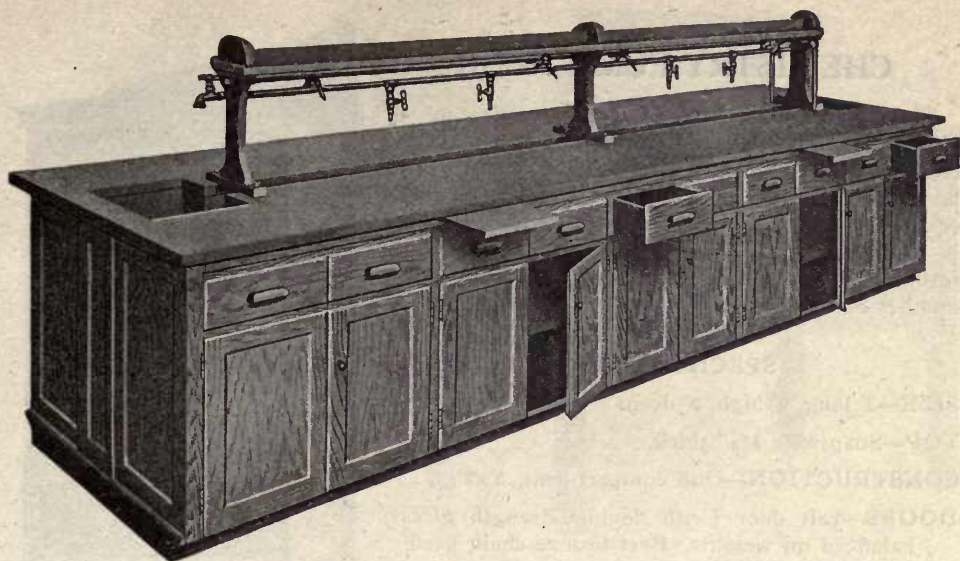
MATERIAL—Exposed parts below top are plain oak.

FINISH—Antique (or any other shade when so ordered), with three coats of varnish and rubbed.

WEIGHT—Crated, with stone top, 2,700 lbs.; with wood top, 2,000 lbs.

Prices

2918c/1	With stone top and master keyed mortise locks.....	\$330.00
2918c/2	With stone top, but without locks.....	282.00
2918c/3	With wood top and master keyed mortise locks.....	305.00
2918c/4	With wood top, but without locks.....	257.00



2918(d)

PATHOLOGICAL AND INDUSTRIAL LABORATORY TABLE

This table is often used in pathological and industrial laboratories. The sinks at the ends of the tables are large and are built inside the table. The spaces on the sides of the sinks furnish ample room for practical use. There are four pull shelves. The plumbing is exposed, with the exception of connections, which are inside the table and accessible. **THIS TABLE IS FURNISHED IN ANY LENGTH REQUIRED.**

SPECIFICATION

SIZE—15' long, 4' wide, 3' high.

TOP—Soapstone, $1\frac{1}{4}$ " thick, or birch $1\frac{3}{4}$ " thick. When wood top is furnished, it is treated acid proof.

GUTTER—Soapstone or lead lined, $5\frac{1}{2}$ " wide x 2" deep at center, slanting to $5\frac{1}{2}$ " at the sinks.

SINKS—Two soapstone sinks, each 18"x18"x12" deep, with standing removable overflow and extra heavy lead waste traps.

WATER—Four nickel plated compression water cocks with detachable hose nipples. By removing the detachable hose nipples, a Richard's aspirator can be attached. We also furnish one $\frac{3}{8}$ "x $\frac{1}{4}$ " reducer for the use of a Chapman aspirator. The two end water cocks are threaded for regular $\frac{3}{4}$ " hose connection.

GAS—Four two-way gas hose cocks, eight outlets. Water and gas plumbing is furnished complete to floor line.

RE-AGENT SHELVES—Made with retaining rims, and are treated acid proof.

PULL SHELVES—Four, two on each side.

DRAWERS—Lap front, in order to exclude dust as much as possible.

DOORS—Paneled and lap front.

LOCKS—On drawers and cupboards, when so ordered.

MATERIALS—Exposed parts below top are plain oak.

FINISH—Antique (or any other shade when so ordered), with three coats of varnish and rubbed.

WEIGHT—Crated, with stone top, 2,700 lbs.; with wood top, 2,000 lbs.

Prices

2918d/1	With stone top, but without locks.....	\$350.00
2918d/2	With wood top, but without locks.....	320.00
	Locks extra, each	1.00

CHEMISTRY FUME HOOD

This fume hood is similar in construction to our No. 1095, with the exception that it has only one compartment. In many laboratories one of these hoods is placed in each corner of the room. Six square feet are required for each hood. Plumbing is complete to floor line. This hood is regularly furnished single as illustration, although two of any number of sections may be had.

SPECIFICATION

SIZE—3' long, 9' high, 2' deep.

TOP—Soapstone $1\frac{1}{4}$ " thick.

CONSTRUCTION—One compartment, 3'x2'.

DOORS—Lift door (with double strength glass), balanced on weights. Best bronze chain used.

BACK—The hood has no back. It is built to be fitted against the wall. We furnish them with back when so ordered.

GAS—Two gas hose cocks placed as illustrated. Plumbing is complete to floor line.

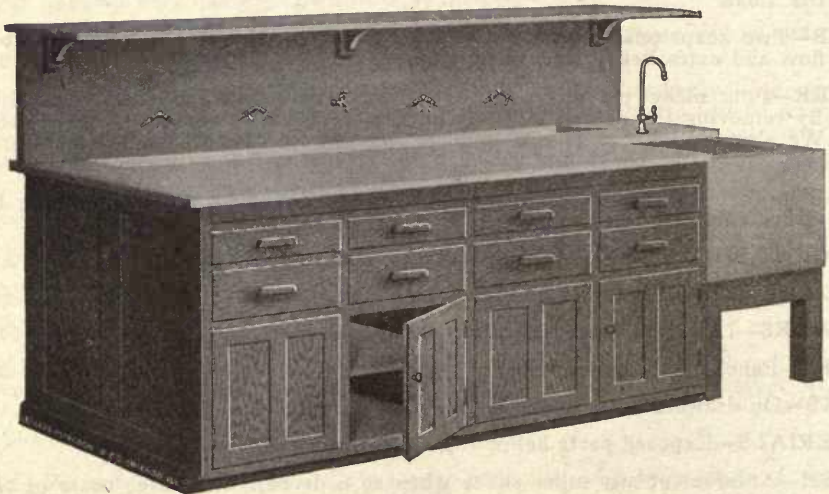
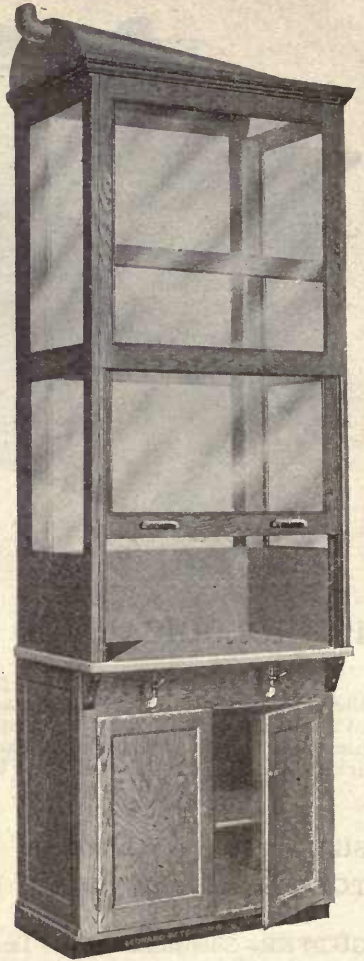
MATERIAL—Exposed parts are oak.

FINISH—Antique (or any other shade when so ordered), with three coats of varnish and rubbed.

WEIGHT—Crated, 300 lbs.

Prices

Without back	\$75.00
With back	85.00



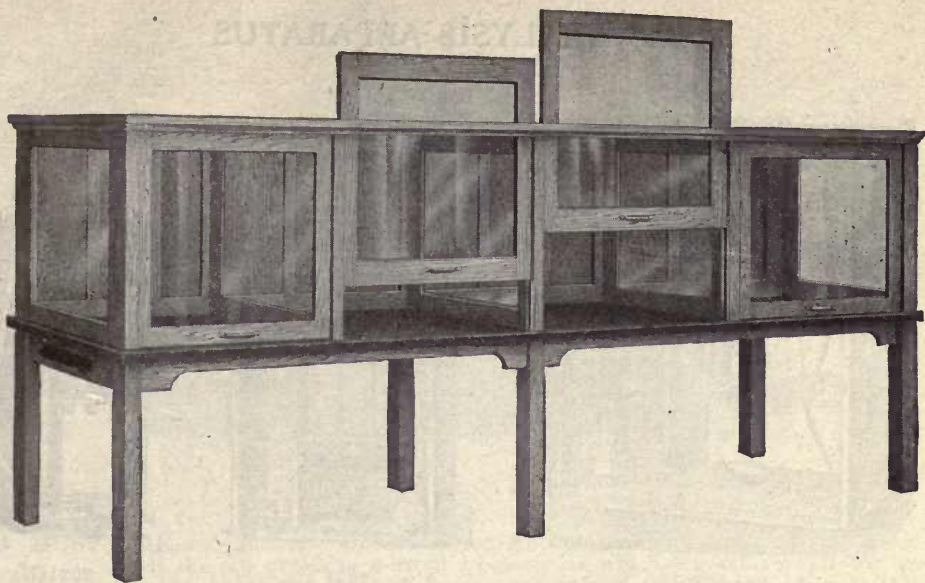
2918F

Special sizes made on short notice.

This table is often used in professors' private offices, pathological and industrial laboratories. It is equipped with soapstone top, trough and sink. It has a single re-agent shelf treated acid proof. The table is 8' long, 2' 6" wide, 3' high. Gas, water and waste furnished complete to floor line.

Price F. O. B. Chicago

No. 2918F	\$160.00
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2918(g)

BALANCE CASE AND WALL TABLE

SPECIFICATION

SIZE—11' 6" long x 2' wide. Table is 32" high. Each compartment measures inside 32" wide x 19" deep x 30" high.

MATERIAL AND CONSTRUCTION—Working top is $1\frac{3}{4}$ " thick birch, matched and glued. Legs are held in place by braces and bolts. The case and the lower part of the table are constructed of plain oak. The back is paneled. The doors are supported on spring balances. Glass in doors, ends, partitions, and top is double strength A. A. The handles are solid brass.

FINISH—The working top is finished black and oiled. All oak is finished antique (or any other shade when so ordered), with one coat filled and three coats varnish, rubbed.

WEIGHT—Crated, 860 lbs.

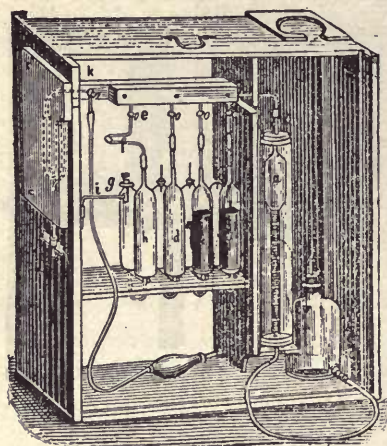
Prices

Containing four compartments\$132.00

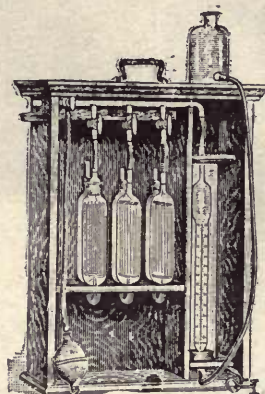
Containing two compartments 67.00

Special Laboratory Furniture made to order. Please submit your plans to us for our prices and suggestions.

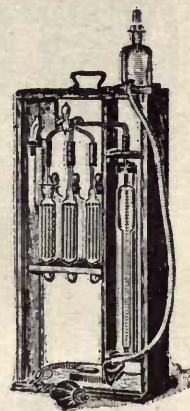
GAS ANALYSIS APPARATUS



2920



2921



2921(b)

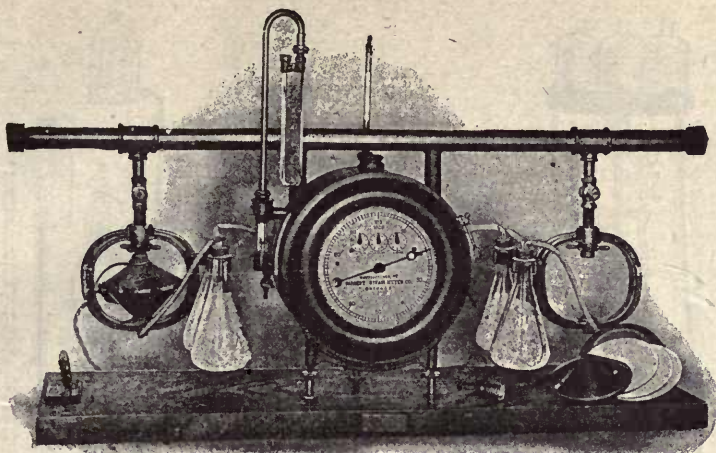
- 2920 GAS APPARATUS, Orsat Lunge's**, for flue and furnace gases, for analysis of CO_2 , CO , O and H consisting of four absorption pipettes, tube with 5 stopcocks, gas measuring tube with water jacket and aspirator bottle, in portable wooden case.....\$40.00
For extra parts see 2921(a).

- 2921 GAS APPARATUS, Orsat-Muencke's**, for flue and furnace gases, for analysis of CO_2 , CO , O and H consisting of four absorption pipettes, tube with 5 stopcocks, gas measuring tube with water jacket and aspirator bottle, in portable wooden case..... 30.00
For extra parts see 2921(a).

2921(a) GAS APPARATUS, Separate parts for Nos. 2920-2921.

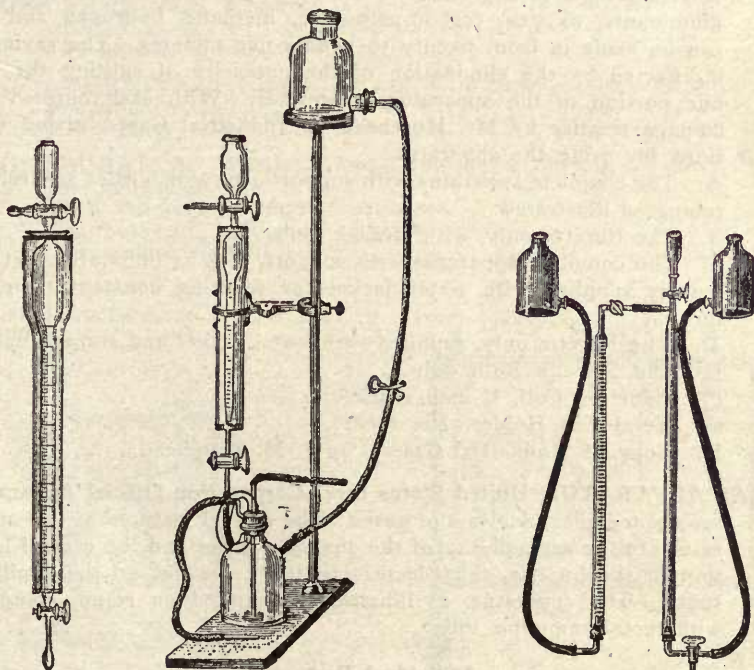
Measuring tubes with jacket for any of above.....	6.00
Tube with 5 stopcocks for No. 2920.....	11.00
Tube with 4 stopcocks for No. 2921.....	10.00
Pipettes, filled with glass tubes and copper spirals, with ground in glass stopper.....	6.00
Pipettes, filled with glass tubes.....	4.00
Pipettes, plain.....	3.50
Soft Rubber Bags, for attaching to Orsat Pipettes.....	.60
Aspirator Bulbs of Rubber with two valves, and rubber connections..	1.00
Aspirator Bottles.....	2.00
N. B.—The above prices are for parts which fit the apparatus which we sell; special sizes we can make to order at reasonable prices.	
State apparatus wanted for.	

- 2921(b) GAS APPARATUS, Orsat Muencke's, Petrzilka modification**, with large universal stopcock, dispensing with four smaller ones, in portable case 50.00
Extra Stopcocks for above..... 18.00



2923

- 2923 **DUST, TAR and Moisture Determination Apparatus**, consisting of a test meter, across the top of which is fixed a brass pipe which serves as a flue for the gases to be tested, as well as a support for the filter holders. Each holder is separated by loosening the thumbscrews, and the filter paper through which the gas passes may be inserted or removed without disarranging the operation or adjustment of the other parts. An electric light in the clean side of the filter holder keeps any moisture in the gas sufficiently volatile to prevent disruption of the filter paper. To the filter holders are attached the calcium chloride beakers to absorb the moisture, and a manometer and thermometer on the meter permit reductions of metered to standard gas.
- Complete with meter.....\$200.00
 Single dust filter without meter..... 50.00

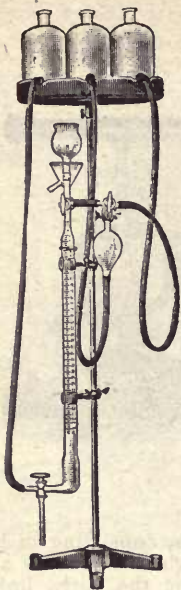


2925

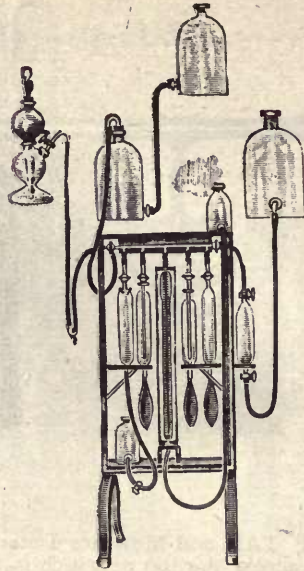
2926

2927

- 2925 **GAS BURETTE**, Bunte's, with two stopcocks.....\$ 9.00
 2926 **GAS BURETTE**, Bunte's, with support, reservoir and rubber connections.. 15.00
 2927 **GAS BURETTE**, Elliott's, for analysis of furnace and illuminating gases; complete with reservoirs and rubber connections..... 20.00



2927(a)



2927(b)

2927(a) GAS BURETTE, Morehead's (patented), as used by the Peoples Gas Light and Coke Co. and others. This Burette, while sacrificing none of the accuracy possessed by the Hempel, Orsat or McIntosh-Elliott very greatly decreases the time necessary for an analysis. A complete analysis of coal, water, natural fuel, producer, acetylene, or gasoline gas, comprising determinations of any or all of the following constituents, carbon dioxide, illuminants, oxygen, carbon-monoxide, methane, hydrogen and nitrogen, can be made in from twenty to twenty-five minutes. The saving in time is effected by the elimination of the necessity of shifting the gas from one portion of the apparatus to another. With each outfit we send a 20-page treatise by Mr. Morehead on Industrial Gases, giving full directions for using the apparatus.

A. The complete apparatus with support aspirator bottles and rubber tubing as illustrated.....	\$28.00
B. The Burette only, with storage bulb.....	17.50
C. The complete apparatus with support, etc., as illustrated, but the burette supplied with water jacket for securing constant temperature	37.50
D. The Burette only, supplied with water jacket and storage bulb..	24.00
E. The Storage Bulb only.....	3.00
F. Induction Coil, ¼-inch spark.....	6.50
G. Metal Gas Holder, No. 2955.....	3.25
H. Copy of "Industrial Gases," by J. M. Morehead.....	.25

2927(b) GAS APPARATUS, United States Steel Corporation Official Apparatus, for the technical analysis of gases. The special features of this apparatus are the accessibility of the auxiliary gases and the central location of the burette, thus decreasing the error due to the capillary space. The apparatus, as illustrated, mounted on stand, complete with metal sampling tube..... 50.00

Individual Parts:

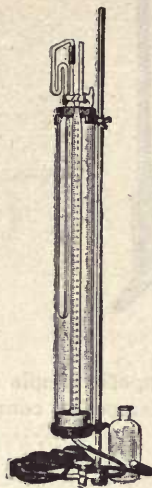
Tube with stopcocks.....	10.50
Explosion Pipette.....	5.00
Liquid Reagent Pipettes. Each.....	6.50
Solid Reagent Pipettes. Each.....	5.00
Burette with jacket, complete.....	10.50



2933



2934

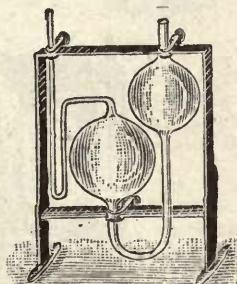


2934(a)

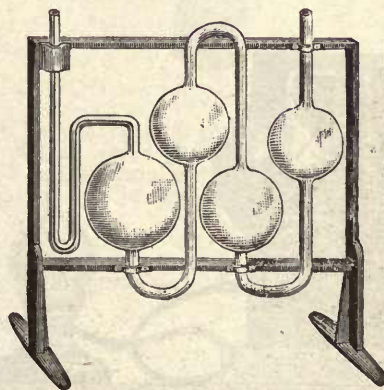


2936

- 2933 GAS BURETTES, Hempel's, graduated to 100 cc. in $\frac{1}{5}$ cc. mounted on heavy iron japanned bases with wooden pillars, complete, per set. \$ 5.00
The graduated burette only..... 2.50
- 2934 GAS BURETTES, Hempel's, as above, but with plain and 3-way stopcocks in graduated tube, complete, per set..... 7.50
The graduated burette only..... 4.50
- 2934(a) GAS BURETTES, Hempel's arranged for temperature and barometric correction, complete as illustrated..... 17.50
Glass parts only..... 12.00
- 2936 GAS BURETTES, Winkler's, measuring tube divided in $\frac{1}{5}$ and its lower part in $\frac{1}{20}$ cc.
With fittings and support complete..... 15.00
The measuring tube and filling tube only..... 10.00
The measuring tube only..... 6.25

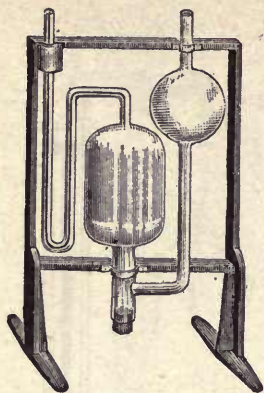


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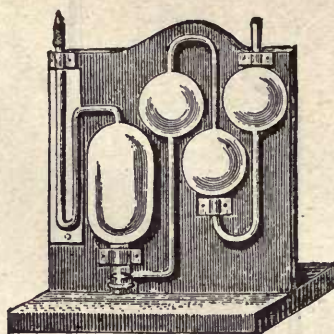


2943

- 2942 GAS PIPETTE, Hempel's, simple absorption, for liquid reagents, mounted. \$ 3.50
- 2943 GAS PIPETTE, Hempel's, compound absorption, for liquid reagents, mounted 5.00



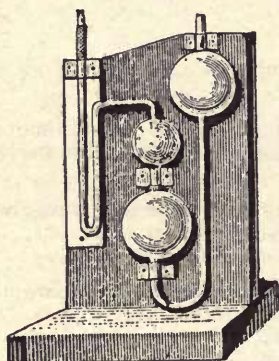
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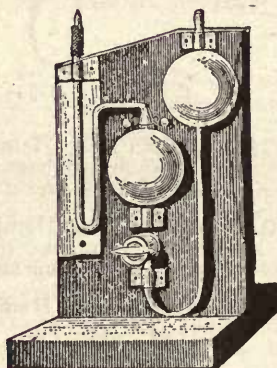
2945

2944 GAS PIPETTE, Hempel's, simple absorption, for solid reagents, mounted..\$3.50

2945 GAS PIPETTE, Hempel's, compound absorption, for solid reagents, mounted 5.00



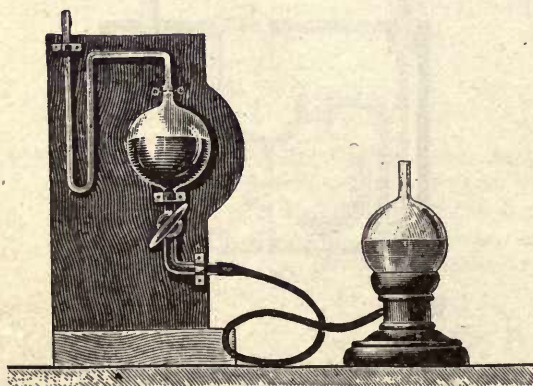
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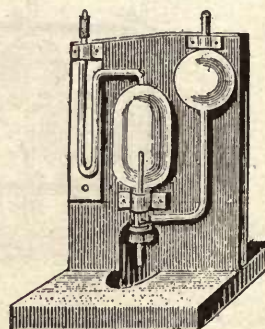
2947

2946 GAS PIPETTE, Hempel's, sulphuric acid, with glass, mounted..... 5.00

2947 GAS PIPETTE, Hempel's, for explosion, simple, with stopcock and platinum electrodes, mounted..... 5.75



2949



2950

2949 GAS PIPETTE, Hempel's, explosion, new form, with leveling bulb..... 7.50

2950 GAS PIPETTE, Hempel's, for hydrogen, simple, mounted..... 5.00



2954



2952



2955

- 2952 **GAS PALLADIUM TUBE**, Hempel's, for absorption of hydrogen, filled with palladium black.....\$5.00 to 10.00
- 2954 **GAS COLLECTING TUBES**, of glass, plain, with stopcock at each end.
Capacity 100 250 500 cc
Each\$3.50 4.50 5.00
- 2955 **GAS COLLECTING TUBES**, Winkler's, of zinc, with two stopcocks; for collecting and holding gas samples; 12 inches long, $4\frac{1}{2}$ inches diameter\$3.25
- GAS BULBS**, Chancel's and Dumas', see Bulbs.
GAS BAGS, see Bags.
GAS BALLOONS, for weighing gases, see Balloons.
GAS BOTTLES, Washing, see Bottles.
- 2955a **GAS, Ammonia, Anhydrous Ammonia**, liquified, in 35 and 100-lb. cylinders, lb. \$0.50
- 2955b **GAS, Carbonic**, liquefied, in 18-lb. cylinders, lb. .25
- 2955c **GAS, Chlorine**, liquefied, in cylinders of 100 lbs., lb. .25

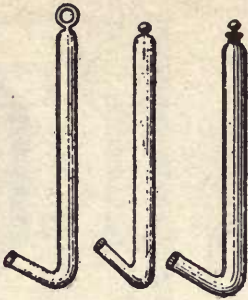


2955d



2955e

- 2955d **GAS CYLINDERS**, Steel, tested to 600 lbs. hydrostatic pressure. The capacity is based on a pressure of 225 pounds, at which pressure the cylinders are filled by us. The price includes a brass name plate engraved with name and address and the McLahlan patent double needle valve.
Cubic feet..... 25 40 50
Each\$20.00 25.00 30.00
Cylinders filled with pure Oxygen Gas, per cubic foot.....\$ 0.12½
- 2955e **GAS, Oxygen**, in seamless steel cylinders, under a pressure of 1,800 pounds per square inch.
40 gallon (cylinder, \$7.50; Gas, 2.50)..... 8.25
100 gallon (cylinder, \$12.00; Gas, 5.00)..... 17.00
Wheel key and yoke for rubber tubing..... 1.75
- N. B.—We allow full price for empty cylinders if returned in good order within a reasonable time. Wheel key and yoke not returnable.
- 2955f **GAS, Sulphur Dioxide**, liquefied.
In 20-oz. tins, each.....\$0.50
In 6-lb. iron cylinders, each..... 6.00
Cylinders and tins not returnable.

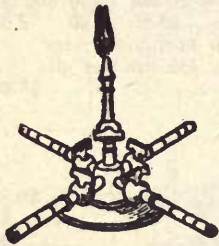


2956

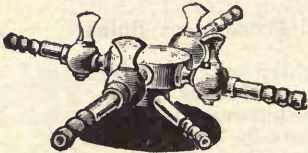


2958

- 2956 GAS Collecting Tubes. Style a, \$0.35; Style b, .35; Style c, .50
2958 GAS Collecting Tube, Schroetter's.....\$0.50



2960



2960(a)

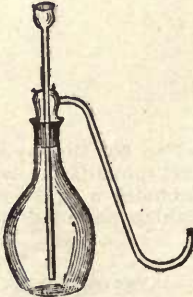


2961(a)

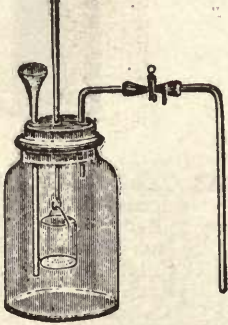
- 2960 GAS DISTRIBUTOR, with four side tubes and one center burner, all with stopcocks.....\$7.00
2960(a) GAS DISTRIBUTOR, same as above, but with one center burner..... 6.00
2960(b) GAS DISTRIBUTOR, with three outlets, and one center burner, all with stopcocks 6.00
2961 GAS DISTRIBUTOR, same as above, but without center burner..... 4.75
2961(a) GAS DISTRIBUTOR, two outlets, with stopcocks..... 3.75



2962

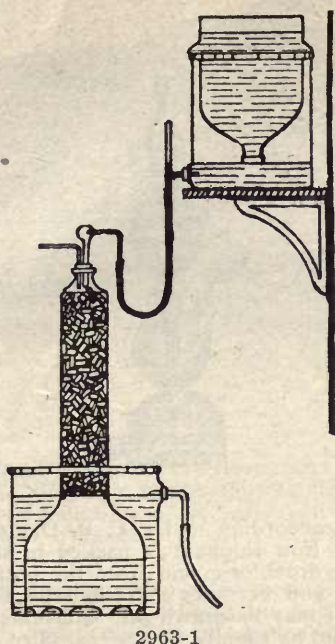


2963

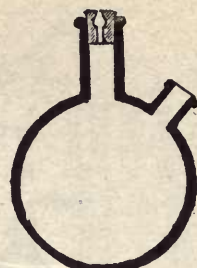


2963(a)

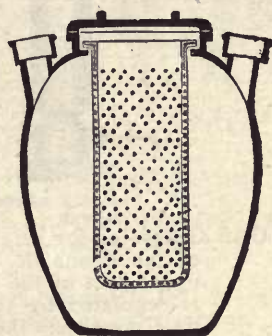
- 2962 GAS GENERATORS, gas bottles, fitted with rubber stopper, thistle tube, and delivery tube.
Capacity, ounces..... 4 8 16 32
Each\$0.50 .60 .70 .80
2963 GAS GENERATOR. As above, with tubes ground into the neck.
Pint size, each.....\$2.50
2963(a) GAS GENERATOR. Consisting of generating bottle, funnel tube, lead basket and delivery tube with pinchcock. Quart size, each.....2.00



2963-1



2963-4



2963-3

2963-1 GENERATOR—Parson's Automatic, for H_2S , CO_2 and H . This is the most popular generator for large requirements; used by the majority of educational laboratories throughout the country to distribute H_2S to laboratory classes.

The apparatus is perfectly automatic in action, and the refuse is automatically removed, while the pressure is almost constant. Only fresh acid comes in contact with the solid reagent, so that the full strength of the acid is utilized. There are no stoppers or valves, the apparatus being controlled entirely from the exits. It requires practically no attention, is easily cleaned and refilled without being taken apart. Forty outlets flowing at the rate of two bubbles every second can be furnished by one apparatus. Most instructors prefer exits for use with hydrogen sulphide to be situated in the hoods; the rubber connection containing a small piece of capillary tubing, being concealed behind a block, screwed to the wall; thus the student sees only a rubber tube protruding from a hole, and being unaware that his supply is limited by the size of the capillary, has no means of increasing the supply. Waste is thereby avoided.

Generator of light yellow acid proof stoneware, complete with the necessary glass parts and rubber stopper.....\$25.00

Crates and packingextra, 1.50

Special globular iron sulphide, free from dust, for use with this generator; in lots of 25, 50 and 100 pounds respectively.....per pound, net, .20

Lead Piping, with series of outlets for hood. Price according to number of outlets and distance.

Renewals—

Bottle A..... 3.50

Pot B 4.50

Tower C 15.00

Pot D 3.50

Disc75

Non-syphoning tube..... .50

2963-2 Ditto—For Chlorine, and other gases. Of best acid proof stoneware, with air tight covers ground on.

Capacity, gallons	6	12	20	25	33	39½
Each	\$4.50	6.50	10.00	12.00	13.50	17.50

2963-3 Ditto, With inside vessel..... 5.60 8.00 12.00 14.20 17.00 22.00

2964-4 Ditto—For Chlorine. Of best acid proof stoneware, with perforated ground stoppers.

Capacity, gallons	⅛	¼	½	1	1½
Each	\$1.50	1.80	2.20	3.00	4.25



2964

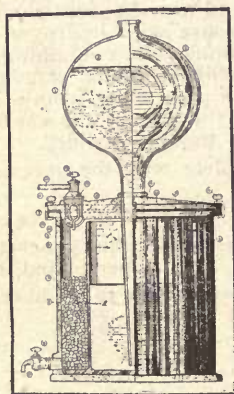


2966

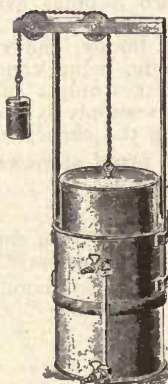
- 2964 GAS Generator for sulphuretted hydrogen, according to Dr. C. B. Dudley, of the Penna. R. R. Company. The iron sulphate is packed in the upper part of the jar. The flow of hydrochloric acid from the bottle is regulated by the glass stopcock, and becomes saturated by the time it reaches the bottom, whence it may be drawn off. Convenient for generating the gas in quantity, and as rapidly as desired. Size of jar, 18x4 inches. Capacity of acid bottle, $\frac{1}{2}$ gallon.....\$12.00
See Electrolytic Apparatus.

- 2966 GAS Generator, Kipp's, complete.

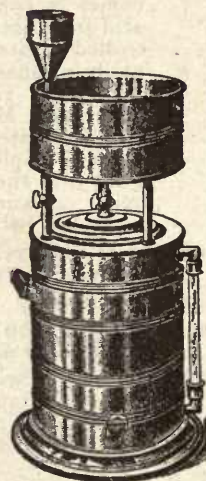
Capacity, liters	$\frac{1}{2}$	1	2
Each	\$8.00	10.00	15.00



2968

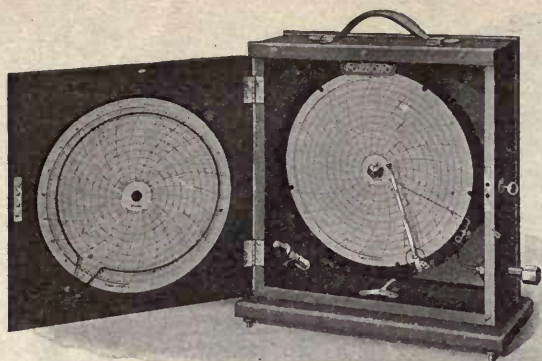


2971

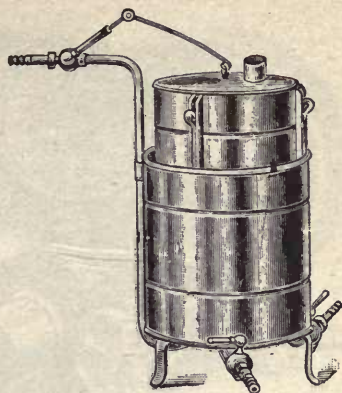


2972

- 2968 GAS Generator, Ernest form. The distinctive features of this generator are compactness and stability, incorporation of a washing device, ease of cleaning and charging, absence of rubber parts, regulation of operation and greater gas storage capacity. Price.....
- 2971 GAS Holder, sliding receiver, made of leaded iron, painted, mounted on iron frame, with pulleys and weights, capacity 20 gallons.....\$50.00
- 2972 GAS Holder, Berzelius' and Pepy's improved form.
- | | | |
|-----------------------------|---------|-------|
| Capacity, gallons | 5 | 10 |
| Of heavy copper, each | \$30.00 | 40.00 |
| Of heavy zinc, each | 20.00 | 25.00 |
- 2974 GAS Machines for making gas or acetylene gas in quantity for illumination or for heating purposes. Specifications and prices on complete plants on application.



2972(a)



2975

2972a Gas Recorders. Moisture, dust and fume proof. Portable type provided with U-gauge for testing the recorder. For pressure or vacuum.

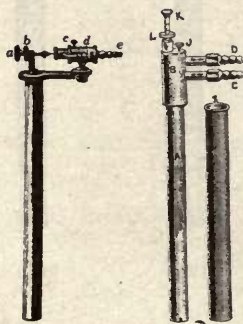
With U-gauge 8-inch....\$47.00; 10-inch....\$55.00
Without U-gauge 8-inch:..\$38.00; 10-inch.... 44.00; 12-inch.... 52.00

2973 Gas Regulator, Roux, Bi-metallic, designed to meet the demands for an accurate regulator without the use of mercury or glass in its construction. It is particularly well adapted for Incubators and other Ovens where a constant, even temperature is desired. Inlet tube E is connected by means of rubber tubing to the gas supply; the outlet D is connected in the same manner with the burner under the incubator. A is a set screw for pilot light. Diameter of tube, 1 inch.

Small size, 10 inches long\$10.00
Large size, 12 inches long 11.00

2973(a) Gas Regulator, Thermo-Regulator, Roux. Same as above, but made for high temperature. In two sizes:

Small, 10 inches long 11.00
Large, 12 inches long 12.00

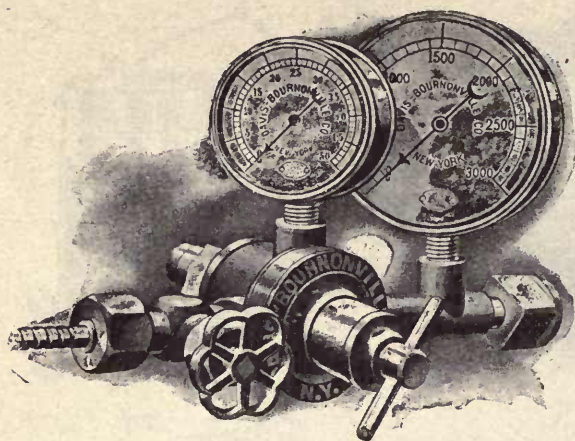


2973-bb

2973(b) Gas Regulator, Greenman's, made entirely of steel. The gas entering at "C" must pass the valve "H" before passing to the burner through "D", excepting that a small quantity, determined by the screw valve "J" passes through the by-pass "T" to maintain the pilot flame. The mercury in the tube "A" when expanded raises the valve "H" against the conical valve seat "G" and the valve is prevented from falling too far by the pin at "O." The volume of the mercury is controlled by the rod "K" which is held in place by the screw "L." By adjusting the rod "K" and the screw valve "J" an extremely accurate control of the gas supply and the temperature may be maintained. The slightest increase in the volume of the mercury contained in the tube "A" produces a considerable difference in the height of the mercury in the passage "F" and the float "H," which is about two-thirds submerged in the mercury, is carried upward and closes the valve "G." The brass tube into which the regulator is to be inserted should be filled with glycerine 12.00

2975 Gas Pressure Regulator, Murrill's latest and most convenient form, for use with a thermostat. A constant temperature can be maintained regardless of the pressure variations in the gas supply, with two outlets.... 10.00

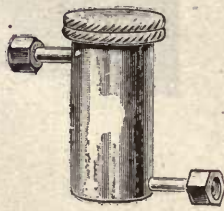
Gas Regulator, see also Thermostats.



2975(a)



2975(b)



2975(c)

- 2975(a) Regulating and Reducing Gauge**, 3,000-pound gauge on inlet, gauge on outlet, with universal fitting for any oxygen tank.....\$35.00
- 2975(b) Gas Regulator.** For shutting off the supply of gas at any desired time. Consists of specially constructed cock with timing device and gas valve. The gas valve is connected by rubber tubing between the gas supply and the apparatus which it is to regulate..... 6.00
- 2975(c) Filter Attachment**, for Greenman Regulator; in fact, may also be used with Roux Regulator, to clean gas of coal tar and other solids, thereby assuring perfect working of Regulator..... 5.00



2976



2978



2980



2982



2984



2986

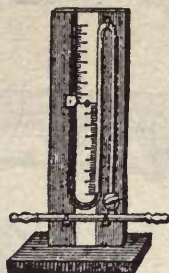
- 2976 GAS Tube, Absorption, Babo's**, filled with glass beads.....\$3.50
- 2978 GAS Tube, Absorption, Bunsen's**, with bulb, graduated..... 2.50
- 2980 GAS Tube, Absorption, Bunsen's**, straight, graduated..... 2.00
- 2982 GAS Tube, Absorption, Emmerling's**, filled with glass beads..... 3.00
- 2984 GAS Tubes, Measuring, Bunsen's.**
- | | | | | | |
|----------------|--------|------|------|------|------|
| Capacity, c.c. | 25 | 50 | 100 | 100 | 200 |
| Graduated to | 1/5 | 1/5 | 1/5 | 1/1 | 1/1 |
| Each | \$1.25 | 1.75 | 1.75 | 2.25 | 2.50 |
- 2986 GAS Tubes, Measuring, with stopcock.**
- | | | | | |
|----------|---------|------------|----------|-----------|
| Capacity | 50 c.c. | x1/10 c.c. | 100 c.c. | x1/5 c.c. |
| Each | \$3.00 | | 3.50 | |



2988



2990



2998

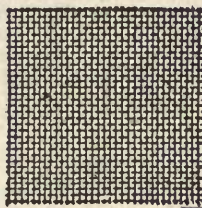


3000

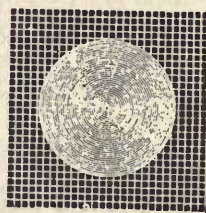
2988	Gas Washing Tube, Muencke's.....	\$1.25
2990	Gas Washing Tube, Scheibler's.....	1.00
2998	GAUGE, Mercury Manometer, with glass stopcock and movable scale on mirror glass, mounted on support.....	11.00
3000	GAUGE, Metallic, indicating pressure.	
	Diameter, inches	3 4 5 6
	Each	\$5.00 6.00 8.00 10.00
3002	GAUGE, Metallic, indicating vacuum.	
	Diameter, inches	3 4 5 6
	Each	\$5.00 6.00 8.00 10.00



3006



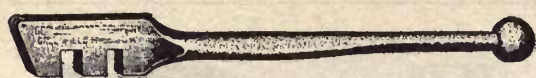
3010 & 3016



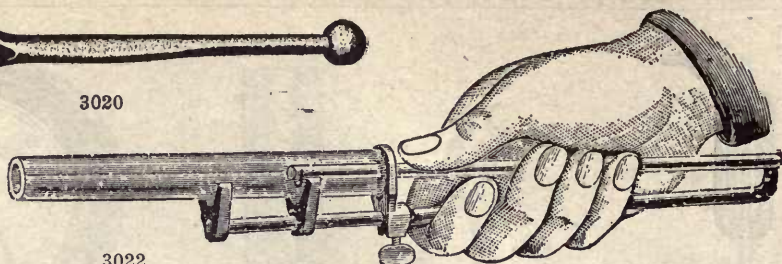
3017

3006	GAUGE for Wire, American standard, Nos. 5 to 36.....	\$3.00
3008	GAUZE, Brass Wire.	
	Meshes to inch	10 20 30 40 60 80 100 200
	Per square foot	\$0.70 .80 .90 1.00 1.20 1.50 2.00 4.00
3010	GAUZE, Brass Wire, correct thickness to use in heating dishes, in square pieces.	
	Size, inches	4 5 6 8
	Each	\$0.15 .20 .25 .50
3012	GAUZE, Copper Wire, for combustions, etc.	
	Meshes, per inch	20 40 60 80 100 200
	Per square foot.....	\$1.00 1.25 1.50 2.00 3.00 4.00
3014	GAUZE, Iron Wire.	
	Meshes, per inch	6 10 14 16 20 30 40 60
	Per square foot	\$0.25 .30 .35 .40 .45 .50 .60 .85
3016	GAUZE, Iron Wire, correct thickness to use in heating dishes, etc., in square pieces.	
	Size, inches	4 5 6 8
	Each	\$0.06 .08 .10 .20
3017	GAUZE, Asbestos Centre. Made of iron wire, with flat asbestos centre.	
	Size, inches	4x4 5x5 6x6
	Each	\$0.12 .15 .20
3017(a)	GAUZE, Nichrome, superior in heat resisting quality to any wire gauze on the market.	

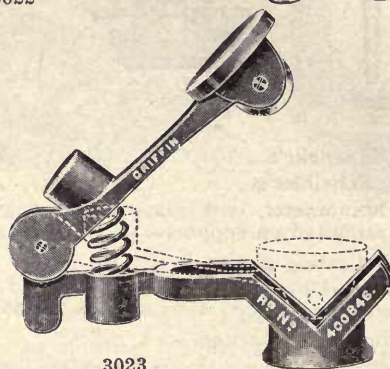
Size of sheet	20 mesh and No. 27 wire	16 mesh and No. 24 wire
4"x4"	\$0.60	\$0.45
5"x5"	.90	.65
6"x6"	1.30	.95
Price per sq. ft.	5.00	3.50



3020



3022



3023

- 3020 GLASS-CUTTER, steel wheel, serving purpose of glazier's diamond..... \$0.25
- 3022 GAGE GLASS CUTTERS. Cuts a perfect circle because the glass tube is held in a parallel position in the fibre rests. The glass does not come in contact with metal except at the cutting wheel, and cutting wheel is easily renewed.
- Large, 12 inches, cuts $\frac{5}{8}$ to inch glass up to 8 inches in length..... 1.50
- Small, 8 inches, cuts $\frac{1}{2}$ inch up to 5 inches in length..... 2.50
- 3023 GLASS TUBE CUTTER—Griffin's, made of nickel plated brass.
- Each 1.00
- Extra steel wheels. Each20
- GLASS Knife, see Knife and also Files.
- GLASS Plates, see Plates.
- GLASS Rods, see Rods.
- GLASS Tubing, see Tubing.
- 3024 GLASS Wool, for filtering acids, etc.
- Per ounce50
- Per pound 6.00



3027



3028



3029

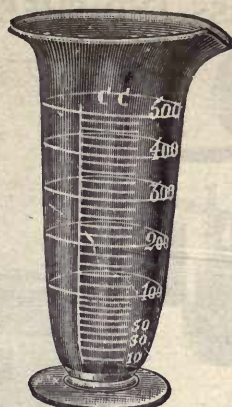


3030

- 3027 GLOVES, Black Rubber. Acid-proof, for protecting the hands in handling acids, nitrate of silver, etc.
- | Size | Short | Half long | Short | Half long | Heavy driven |
|----------|----------|-----------|-------|-----------|--------------|
| No. | 10 to 12 | 10 to 12 | 13 | 13 | 13 |
| Gauntlet | None | 4 in. | None | 4 in. | 5 in. |
| Pair | \$1.25 | 1.50 | 1.40 | 1.65 | 2.00 |
- 3028 GLOVES, White Rubber. For smelters, in use in chlorination and cyanide works, etc. No. 13 with 9-inch gauntlet..... \$3.50
- 3028(a) GLOVES, White Rubber. No. 13, 21-inch gauntlet..... 6.00
- 3029 GLOVES, Asbestos. With thumb and finger, pair..... 3.00
- 3030 GLOVES, Asbestos. Mittens, pair..... 2.50
- 3032 GOGGLES for protecting the eyes, white glass, per pair..... .25
- 3034 GOGGLES, with colored glass, per pair..... .25
- 3036 GOLD Beaters' Skins, each..... .25
- GOLD Washing Pans and Horns, see Pans and Horns.



3040



3042

3038 GRADUATES, Glass, Minim, Conical, accurately graduated.

Capacity	1 dram.	2 drams.	1 ounce.
Each	\$0.25	.30	.50

3040 GRADUATES, Glass, Ounces, Conical, accurately graduated.

Capacity, ounces	1	2	4	8	16	32
Each	\$0.25	.30	.35	.45	.75	2.00

3042 GRADUATES, Glass, Metric, Conical, accurately graduated.

Capacity, c.c.	10	15	30	60	100	200	250	500	1000
Each	\$0.25	.25	.30	.35	.40	.50	.65	1.10	2.50

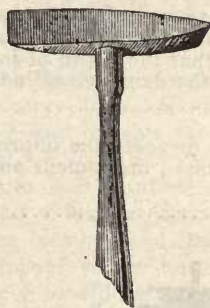
3044 GRADUATES, Glass, Metric and Ounces, Conical, accurately graduated.

Capacity, c.c.	15	30	60	120	250	500	1000
Capacity, ounces	$\frac{1}{2}$	1	2	4	8	16	32
Each	\$0.40	.40	.45	.60	.80	1.20	2.00

GRADUATES, Cylindrical, see Cylinders, Graduated.



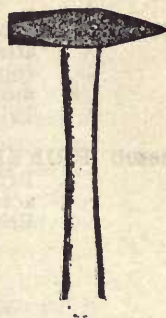
3050



3052



3054



3058

3050 HAMMERS, Mineralogical, according to Dana, square face.

Weight, ounces	10	20	32
Face, inches	$\frac{3}{4}$	1	$1\frac{1}{4}$
Each	\$1.25	1.50	2.50

3052 HAMMERS, Mineralogical, sharpened at both ends.

Weight, ounces	11	24
Each	\$1.20	1.50

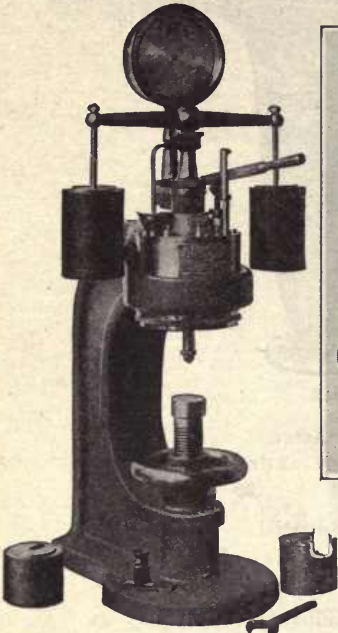
3054 HAMMERS, Plattner's, for blowpipe work..... \$0.75**3056 HAMMERS, Prospecting Picks.**

Pick length, inches	7	8
Each	\$1.25	1.40

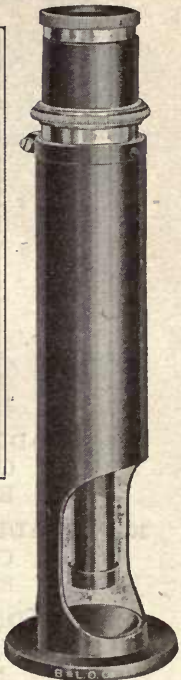
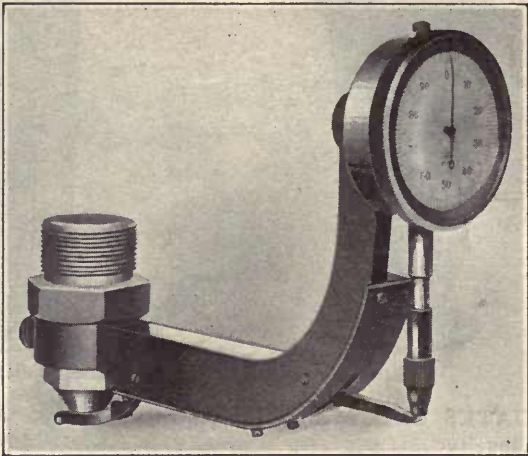
3058 HAMMERS, Wedge Shaped, for breaking ores, slagging, etc.

Weight, ounces	12	15	28
Each	\$0.60	.65	.75

HARDNESS AND SHEET METAL TESTING MACHINES

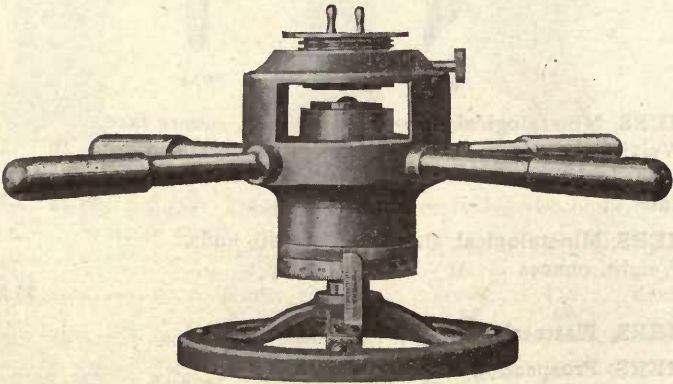


3060



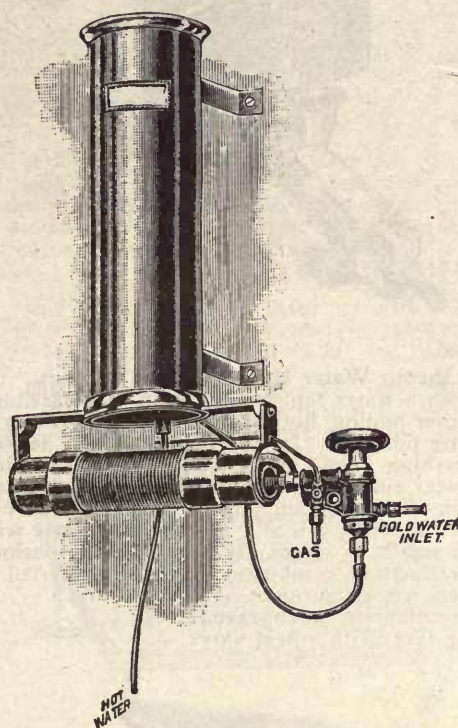
3060B

- 3060 BRINELL Testing Machine.** This instrument measures the hardness of materials by the indentation method. A hardened steel ball is pressed into the smooth surface of the metal so as to make an indentation which is read by optical or mechanical means.
Price, Style "A" (for 3000 Kg. pressure).....Upon Application
- 3060A Attachment for BRINELL Machine** to read the depth of impression. This attachment permits depth readings to 1/100 millimeters, and it was constructed when it was found that the depth of indentation could be more accurately measured than the diameter of indentation.
PriceUpon Application
- 3060B BRINELL Microscope.** Designed to measure the impressions made in the Brinell Ball Test. It is a compound instrument and permits of great accuracy.
Price, with suitable case.....Upon Application



3062

- 3062 Pittsburg Metal Sheet Tester.** To determine the drawing, stamping, compressive and folding qualities of sheets of iron, steel, plated metals and so forth.
PriceUpon Application



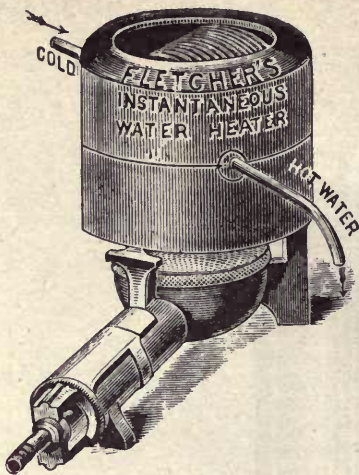
3072

3072 Instantaneous Water Heater, giving instantly a continuous supply of water at any temperature, from boiling to lukewarm, free from the products of combustion, and suitable for all purposes. Designed to hang over lavatory bowl or sink. In two sizes; large size, height 19 inches, projection from wall 8 inches; small size, height 18 inches, projection from wall 6 inches. This water heater is more especially intended for the lavatory and the general odd work of laboratory and domestic purposes where hot water is constantly wanted quickly. The gas supply should be from a $\frac{3}{8}$ -inch pipe. It will work equally well, but at a proportionately slower rate, with any gas supply, however small. The speed at which the water runs rules its temperature. It will heat 1 pint of water per minute from 50 to 130 degrees Fahrenheit, or will boil 15 quarts per hour. The duty of the larger size is about double that above given. It is not designed for baths. Consumption of gas: large size, 40; small size, 20 feet per hour.

Note.—The light must be applied to the gauze before the gas is turned.

Recent Improvements.—A pilot light attachment, which automatically lights the burner when the gas is turned on; also a coupled gas and water tap, operated by a hand-wheel, a turn of which lights the burner and gives an immediate flow of warm water.

3072b	Water Heater, small size, with coupled taps and pilot light.....	\$33.00
3072e	Water Heater, large size, with coupled taps and pilot light.....	39.00
	For Gasoline Gas, extra	1.00



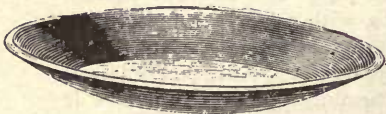
3073

- 3073 HEATER, Instantaneous Water Heater, height 9 inches.** This gives, when connected with a water tap, hot water in three seconds after the gas is lighted, either boiling, hot, warm or cold, the water being pure and fit for cooking purposes. In one minute it will deliver sufficient hot water for washing hands. It is simple, cheap, not liable to get out of order or wear out. Gas supply required, $\frac{3}{8}$ -inch clear bore pipe and tap, to obtain the maximum power, at which it consumes about 60 feet per hour. It will work at a proportionate rate with any gas supply, however small. If frequently used for long periods in a confined room, the products of combustion should be carried away.
- | | |
|---|---------|
| Water Heater, without burner | \$ 7.00 |
| With burner, complete, as engraved..... | 9.00 |
| For Gasoline Gas, with wheel valve..... | 10.40 |



3074

- | | | |
|----------------|---|------|
| 3074 | Horn, Gold Washing Horn, 9 inches long, made of polished steel..... | 1.00 |
| 3074(a) | Horn, Gold Washing Horn, 9 inches long, made of heavy copper..... | 2.50 |
| 3075 | Horn, Gold Washing Horn, of black, hard rubber, showing the least color of gold | 1.50 |

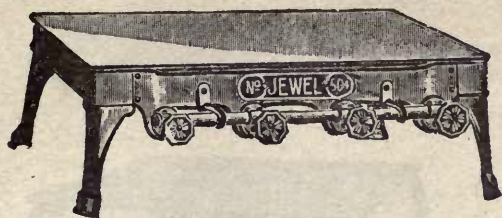


3075(a)

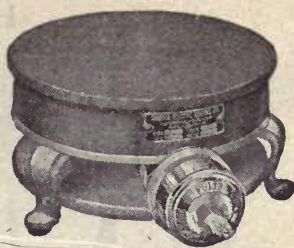


3075(d)

- 3075(a) Gold Pans, Miners', aluminum.**
- | | | | |
|------------------------|--------|------|------|
| Diameter, inches | 6 | 12 | 16 |
| Each | \$1.00 | 1.50 | 2.50 |
- 3075(b) Gold Pans, Miners', polished steel.**
- | | | | |
|------------------------|--------|------|------|
| Diameter, inches | 6 | 12 | 16 |
| Each | \$0.75 | 1.50 | 2.00 |
- 3075(c) Gold Pans, Miners', copper.**
- | | | | |
|------------------------|--------|------|------|
| Diameter, inches | 6 | 12 | 16 |
| Each | \$1.00 | 1.50 | 2.50 |
- 3075(d) Gold Pan, Miners', steel, with copper bottom, 16 inches diameter, 2½ inches deep** \$3.50

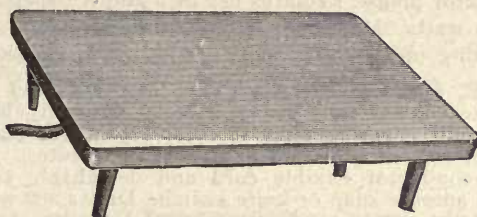


3075(e)



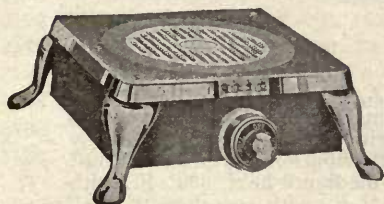
3075(g)

- 3075(e) Hot Plates or Drying Tables for use with gas.** The top is of one piece of steel, with polished surface. The legs and frame are of cast iron. Flame easily regulated. Gives an even temperature.
- | | | | | |
|----------------------------|---------|---------|---------|---------|
| Size of plate, inches..... | 10x18½ | 14½x18½ | 18½x25½ | 18½x36½ |
| Number of burners..... | 1 | 2 | 3 | 4 |
| Each..... | \$10.00 | 12.00 | 21.00 | 30.00 |
- 3075(f) Hot Plates, same as No. 3075(e), but for use with gasoline gas.**
- | | | | | |
|----------------------------|--------|---------|---------|---------|
| Size of plate, inches..... | 10x18½ | 14½x18½ | 18½x25½ | 18½x36½ |
| Each | 11.50 | 14.50 | 23.00 | 33.00 |
- 3075(g) Hot Plate, Electric, for heat of circular form, mounted on enameled slate, with flexible cord, for alternating or direct current, 110 volts, unless ordered otherwise. 8 inches diameter, with cord.....\$14.00**

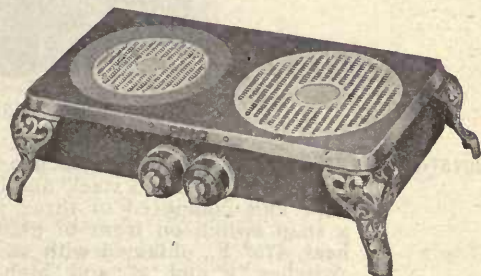


3075(h)

- 3075(h) Hot Plate, Electric, Rectangular form, with 3 heats controlled by plug switch.**
- | | |
|---|---------|
| 9x12 inches, with cord and plug switch..... | \$22.00 |
| 12x18 inches, with cord and plug switch. | 29.00 |
| 18x24 inches, with cord and plug switch..... | 50.00 |



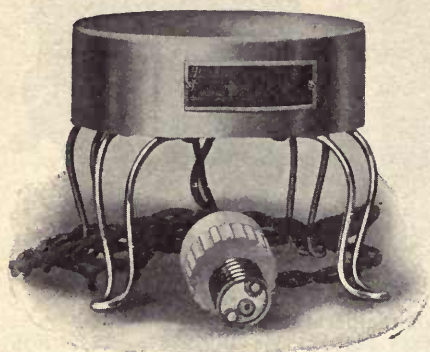
3075(j)



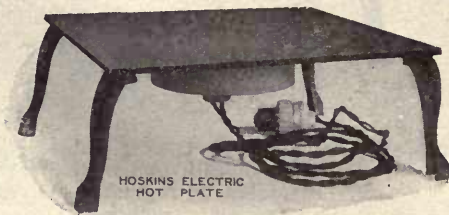
3075(k)

- 3075(j) Hot Plate, Electric, finished in nickel, with switch giving three heats, consuming 220-440-880 Watts. Heating surface, 10½x10½ inches....\$10.00**
- 3075(k) Hot Plate. Same as No. 3075(j), with heating surface 10x21 inches. Has two burners, each with separate switch..... 22.50**
- 3075(m) Hot Plate. Same as No. 3075(j), with heating surface 14x32½ inches, with three burners and separate switches..... 32.50**
- Note.—In ordering Electric Hot Plates, please state VOLTAGE.**

HOSKINS HOT-PLATES



3075(n)

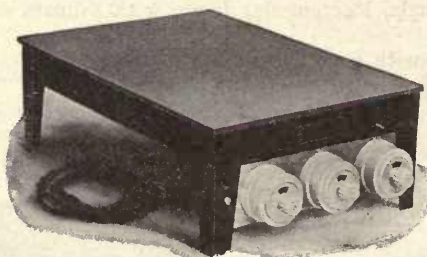


3075(p)

Hoskins Electric Hot Plates are guaranteed for one year against burn-out. The heating element is of Chromel wire, the same as used in Hoskins Electric Furnaces. They operate on 110 or 220 volts, alternating and direct current.

- 3075(n) HOT PLATE—Hoskins' Electric (Type MA No. 101).** Circular, 6-in. diameter. Pressed steel tops, heavy bent wire legs; spiral resistance unit; heat distribution uniform. Boils 1 litre of water from cold in 15 minutes. Furnished with 6 ft. twin-conductor flexible cord and detachable connector plugs. Requires use of 5 ampere snap or knife switch. Draws 500 watts. Maximum temperature, 900° F.....\$ 8.00
Extra heating unit 3.00

- 3075(p) HOT PLATE, Hoskins' Electric (Type MA No. 111).** Square, 12x12 inches. Sheet steel top, cast-iron legs. Centrally heated by spiral resistance unit covering circular area, 5¾ inches diameter. Boils 1 litre of water from cold in 1 hour and 15 minutes. Furnished with 6 ft. twin-conductor flexible cord and detachable connector plugs. Requires 5 ampere snap or knife switch. Draws 500 watts. Maximum temperature in center is 500° F. and 250° F at the edge..... 12.00
Extra heating unit 3.00



3075(q)

- 3075(q) HOT PLATE—Hoskins' Electric (Type MA, Nos. 121, 122, 123).** Steel top and legs; "blued steel" and black enamel finish. Renewable resistance unit composed of three parallel windings, each controlled by a snap switch on front of plate; heat distribution uniform. "Low" heat, 475° F., obtained with switch "1"; "medium" heat, 600° F., with switches "1" and "2"; and "high" heat, 750° F., with switches "1," "2," and "3." High heat boils 1 litre of water from cold in 20 minutes. Furnished with 6 ft. twin-conductor, flexible cord and detachable connector plug. Requires use of double pole knife switch of proper capacity.

Type No.	Size	Price
MA-121,	12"x18"	\$40.00
122,	18"x24"	67.50
*123,	18"x36"	90.00
*Not carried in stock.		
Extra Heating Unit.....		10.00

HYDROMETERS



3160

BEAUME SCALE FOR HEAVY LIQUIDS

3076	HYDROMETER, Beaume, 0—15° in 1/1°	} Each \$1.25
3078	HYDROMETER, Beaume, 0—50° in 1/1°	
3080	HYDROMETER, Beaume, 0—70° in 1/1°	
3082	HYDROMETER, Beaume, 0—100° in 1/1°	
3084	HYDROMETER, Beaume, 0—30° in 1/5°	
3086	HYDROMETER, Beaume, 30—50° in 1/5°	
3088	HYDROMETER, Beaume, 50—75° in 1/5°	
3090	HYDROMETER, Beaume, 0—10° in 1/10°	
3092	HYDROMETER, Beaume, 10—20° in 1/10°	
3094	HYDROMETER, Beaume, 20—30° in 1/10°	
3096	HYDROMETER, Beaume, 30—40° in 1/10°	
3098	HYDROMETER, Beaume, 40—50° in 1/10°	

BAUME SCALE FOR LIGHT LIQUIDS

3100	HYDROMETER, Beaume, 10—70° in 1/10°	} Each \$1.25
3102	HYDROMETER, Beaume, 10—90° in 1/1°	
3104	HYDROMETER, Beaume, 10—50° in 1/5°	
3106	HYDROMETER, Beaume, 10—35° in 1/10°	
3108	HYDROMETER, Beaume, 35—70° in 1/10°	

BEAUME AND SPECIFIC GRAVITY SCALES

3110	HYDROMETER, Beaume, 10—70°, Specific Gravity, 1.000—0.7000	\$1.25
3112	HYDROMETER, Same, with Thermometer	3.00
3114	HYDROMETER, Beaume, 0—70°, Specific Gravity, 1.000—2.000	1.25
3116	HYDROMETER, Same with Thermometer	3.00

BRIX'S SCALE

HYDROMETERS, "Standard" Brix Scale.

3118	HYDROMETER, 0—30; 30—60; 60—90° in 1/2	} Each \$1.25
3120	HYDROMETER, 0—30; 30—60; 60—90° in 1/5	
3122	HYDROMETER, 0—10; 10—20; 20—30° in 1/10, etc.	
3124	HYDROMETER, 0—20; 20—40; 40—60° in 1/10, etc.	
3126	HYDROMETER, 0—5; 5—10; 10—15° in 1/20, etc.	
3128	HYDROMETER, For Osmose, graduated at 80° C.	
3130	HYDROMETER, For sweet water —5 to +5° in 1/5	} 3.00
3132	HYDROMETER, "Standard" Brix Scale, with thermometer. 0—20; 20—40; 40—60; 60—80° 1/10	

SPECIFIC GRAVITY SCALE

3134	HYDROMETER, Specific Gravity, 0.700 to 1.000	} Each \$1.25
3136	HYDROMETER, Specific Gravity, 0.700 to 2.000, "Universal"	
3138	HYDROMETER, Specific Gravity, 0.700 to 0.800	
3140	HYDROMETER, Specific Gravity, 0.800 to 0.900	
3142	HYDROMETER, Specific Gravity, 0.900 to 1.000	

3144	HYDROMETER, Specific Gravity, 1.000 to 2.000.....	} Each \$1.25
3146	HYDROMETER, Specific Gravity, 1.000 to 1.500.....	
3148	HYDROMETER, Specific Gravity, 1.500 to 2.000.....	
3150	HYDROMETER, Specific Gravity, 1.000 to 1.200.....	
3152	HYDROMETER, Specific Gravity, 1.200 to 1.400.....	
3154	HYDROMETER, Specific Gravity, 1.400 to 1.600.....	
3156	HYDROMETER, Specific Gravity, 1.600 to 1.800.....	
3158	HYDROMETER, Specific Gravity 1.800 to 2.000.....	

Any of the above specific gravity hydrometers can be supplied to order, with thermometers.

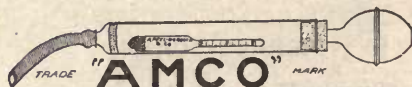
Any of the above hydrometers can be supplied with the corresponding Beaume scale for \$0.50 extra.

TWADDLE'S SCALE

3160	HYDROMETER, Twaddle's, No. 1, 0 to 24°.....	} Each \$1.25
3162	HYDROMETER, Twaddle's, No. 2, 24 to 48°.....	
3164	HYDROMETER, Twaddle's, No. 3, 48 to 72°.....	
3166	HYDROMETER, Twaddle's, No. 4, 72 to 96°.....	
3168	HYDROMETER, Twaddle's, No. 5, 96 to 120°.....	
3170	HYDROMETER, Twaddle's, No. 6, 120 to 144°.....	

MISCELLANEOUS HYDROMETERS

3172	HYDROMETER, Acid, 0 to 70° Beaume.....	} Each \$1.25
3174	HYDROMETER, Acid, 0 to 100° Beaume.....	
3176	HYDROMETER, Alcohol, with proof and Tralle's scales.....	
3178	HYDROMETER, Alcohol, with proof and Tralle's scales and thermometer.....	\$3.00
3180	HYDROMETER, Alkali, 0 to 50° Beaume.....	1.25
3182	HYDROMETER, Ammonia, 10 to 50° Beaume in 1/5°.....	1.25
3184	HYDROMETER, Bark, 1.000 to 1.070, specific gravity.....	3.00
3186	HYDROMETER, Bark, 1.000 to 1.070, with thermometer.....	3.00
3188	HYDROMETER, Battery, Beaume scale.....	1.25
3190	HYDROMETER, Battery, flat bulb, short, for storage batteries.....	1.50



3192

3192	HYDROMETER, Battery. Combined syringe and hydrometer. The most convenient appliance for testing and equalizing the solution in storage batteries.....	3.00
3194	HYDROMETER, Beer, Balling's standard.....	5.00
3196	HYDROMETER, Coal Oil, 10 to 90° Beaume.....	1.25
3198	HYDROMETER, Coal Oil, with thermometer 10 to 90° Beaume.....	3.50
3199	HYDROMETER, Coal Oil, Standard, adopted by U. S. Petrol Assn., with thermometer.....	3.50
3200	HYDROMETER, Gasoline, 10 to 90° Beaume.....	1.50
3202	HYDROMETER, Gasoline, Patented Pocket Gasoline Gauge, consisting of a Beaume hydrometer held in a glass cylinder by means of a wire guard frame, which prevents the hydrometer from falling out and from striking the bottom of the cylinder, net.....	} Each \$1.25
3204	HYDROMETER, Glycerine, 20 to 80° Beaume in 1/10°.....	
3206	HYDROMETER, Lye, 0 to 50° Beaume.....	

NOTE

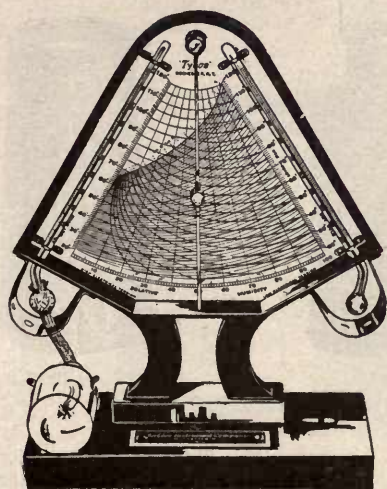
PLEASE TAKE NOTICE THAT THE PRICES LISTED IN THIS CATALOG ARE THE LATEST ONES ON ALL ITEMS LISTED UP TO THE TIME OF GOING TO PRESS. WE MENTION THIS FACT FOR THOSE WHO COMPARE OUR PRICES WITH THOSE OF OTHER SUPPLY HOUSES, WHOSE CATALOGS ARE NOT OF RECENT DATE TO INCLUDE SUCH ADVANCES ON ALL ITEMS AS HAVE BEEN MADE DURING THE PAST YEAR.

ANY IMPORTANT CHANGES IN PRICE WILL BE LISTED FROM TIME TO TIME IN OUR SUPPLEMENTARY PRICE LISTS.

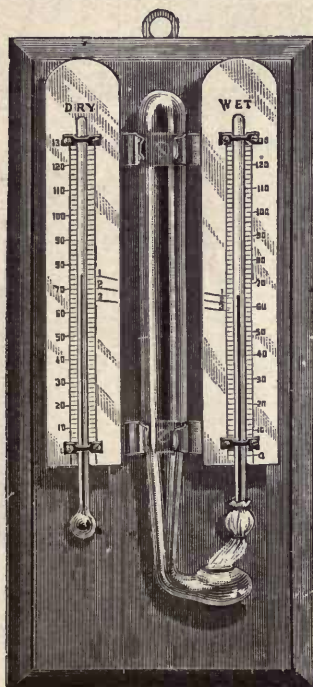
CELERITAS BRAND

3208	HYDROMETER, Milk, giving percentage of water added.....	\$1.25
3212	HYDROMETER, Milk, N. Y. Board of Health, with thermometer.....	3.00
3214	HYDROMETER, Milk, Quevenne's.....	1.50
3216	HYDROMETER, Milk, Quevenne's, with thermometer.....	3.50
3218	HYDROMETER, Naptha, 40 to 100° Beaume.....	} Each \$1.25
3220	HYDROMETER, Salt, 0 to 50° Beaume.....	
3222	HYDROMETER, Silver, or "Actinometer".....	
	HYDROMETER, Spirits, see Hydrometers for Alcohol.	
3224	HYDROMETER, Sugar or Syrup, 0 to 50° Beaume.....	
	HYDROMETER, Sugar, see also Hydrometers, Brix's Scale.	
	HYDROMETER, Urine, see Urine Analysis Apparatus.	
3226	HYDROMETER, Vinegar	
	HYDROMETERS, see also under Oil Testing Apparatus.	

Note:—There are a great many styles of Hydrometers, not listed herein, but which we are prepared to make. Prices upon application.



3226



3232



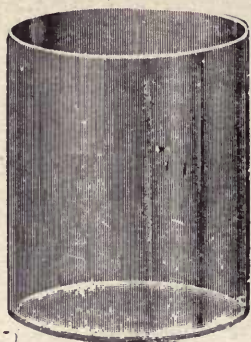
3233

- 3228 Hydroeik, an improved form of the Mason's Hygrometer. Consists of two thermometers (wet and dry bulb) mounted upon the outer edge of a chart, which has been plotted from new and corrected tables prepared under the direction of the United States Weather Bureau.
- 3232 The Mason Hygrometer, while invariably recognized as the most accurate and satisfactory of the many forms of hygrometers in use, has never enjoyed the popularity which its merits deserve, owing to the annoying necessity of reference to complicated tables for determining the Relative Humidity and Dew Point corresponding to the difference in degrees between the wet and dry bulb thermometers at different temperatures.

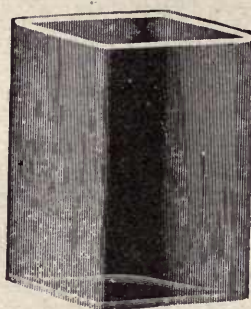
The Hygrodeik chart, while complicated in appearance, is simplicity itself, and obviates entirely the use of tables for temperatures between 20° and 200° F. Full instructions with each.....\$10.00

- 3233 HYGROMETER, Mason's; with wet and dry bulbs. Lines drawn on the scale for convenience of maintaining a humidity of 50° at normal temperatures of the living room; size, 8½x4½ in..... 5.00
- HYGROMETER, U. S. Weather Bureau, consisting of two standard thermometers, extending below the finely polished hardwood back, metal cistern with wick and certificate for each thermometer..... 12.00

JARS



3278



3279

3278 JARS, Battery, glass, round.

Width, inch.....	4	4½	4½	5	5	6	5	8½	9
Height, inches	4	4½	5	6	7	8	11	12	15
Each	\$0.45	.55	.60	.75	.90	1.10	1.80	2.00	3.25

3279 JARS, Battery, square, ground top.

Inches	3½x3½x5	4x4x4	2½x4¼x6	2½x4¼x7	4x4x8
Price	\$0.50	.50	.75	.85	1.00



3280



3283



3288



3292

3289 JARS, Chloride Calcium, on foot, with tubulature near bottom.

Height, mm.....	200	250	300	400
Each	\$1.00	1.25	1.50	2.50

3282 JARS, Chloride Calcium, with perforated glass stopper.

Height, mm.....	200	250	300	350	400
Each	\$1.60	1.75	1.85	2.00	2.25

JARS, Nessler's, see Nos. 2341J, 2341 K.

3288 JARS, Percolator, graduated in ounces.

Capacity, in quarts.....	1	2	4	8
Each	\$2.00	2.50	3.50	5.00

3290 JARS, Percolator, graduated in c.c.

Capacity, in liters.....	1	2	4	8
Mark every c.c.....	100	100	200	500
Each	\$2.50	2.50	3.50	5.00

3292 JARS, Precipitating, of heavy glass, with lip.

Capacity, pints	¼	½	1	2	4	1 gal.	2 gal.	3 gal.
Each	\$0.50	.60	.75	1.00	1.50	1.80	3.50	5.00

JARS, Preparation, see Stender Dishes.



3293



3295



3297

3293 JARS, Lightning, of greenish glass, with glass cover and rubber ring fastened by steel wire clamp.

Capacity	1 Pt.	1 Qt.
Total height, inches.....	5	7½
Inside diameter of neck, inches.....	2¼	2¼
Per dozen	\$1.75	2.25

3295 JARS, Preservation, for storing chemicals, etc., with glass cover and screw top.

Capacity	Pt.	Qt.	½ gal.
Per dozen	\$1.75	2.25	2.75

3297 JARS, Inverted, specimen.

Height, inches	3¾	4¾	6	7¾	9	11	14
Diameter, inches	1½	2	2½	2¾	3¾	4¼	5¾
Capacity, pints	⅛	¼	½	1	2	4	8
Each	\$0.12	.16	.18	.24	.36	.60	1.20
Per dozen	1.20	1.60	2.00	2.50	3.60	6.00	12.00



3298



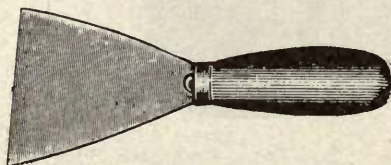
3299

3298 JARS, Stone or Earthenware.

Capacity, gallons	1	2	3	5	6	8	10
Each	\$0.50	.75	1.00	1.50	2.00	2.50	3.50

3299 JARS, Stoneware, with handles and cover, "Waste Jars."

Capacity	¼	½	1	2	3	4	5 gal.
Each	\$0.30	.50	.60	.90	1.20	1.50	1.80



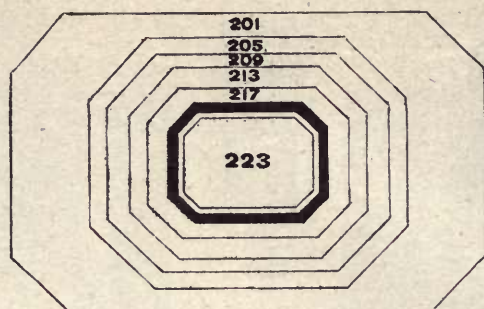
3302



3304

3302 KNIVES, Amalgam, with handle, blade 3 in. wide, for cleaning amalgam plates \$1.00
Knives for cutting cork, see Cork Knife.

3304 Knives for cutting glass, of hard steel..... 1.25



3308

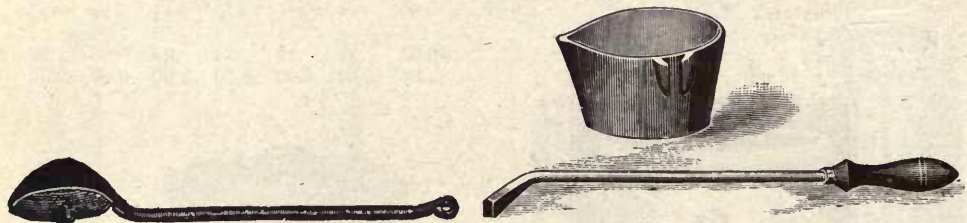
3306 LABEL BOOKS, including the names of the most used chemicals and reagents strip form, gummed and perforated, with name and formula.. **\$0.50**

3308 LABELS, gummed paper, of any size.

No.	223	217	213	261	205	201	219	209	259	241	239	229
Box	\$0.08	.09	.10	.10	.11	.12	.10	.10	.09	.08	.09	.11

3309 LABELS.

No.	2004	2007	2002	2001	2006	2005	2003
Size, in.....	2¾x1	2⅞x1½	3⅞x1	3⅞x1½	3x1⅞	4x1⅞	4¾x2
Box	\$0.20	.25	.25	.30	.35	.40	.50



3312

3314

3312 LADLES, Melting, wrought iron, with lip.

Dia., in.	2½	3	4	5	6
Each	\$0.25	.30	.35	.45	.50

3314 LADLES, cast iron, with detachable handle.

Size, in.	4½x2¾	4⅞x2¾	4x2¾
Each	\$0.65	.60	.50



3316



3317

3316 LAMPS, Alcohol, glass. With ground-on cap, wick and wick holder.

Capacity, ounces	2	4	8
Each	\$0.25	.30	.40

3317 LAMPS, Alcohol, with ground cap, with wick and wick holder included.

Capacity, ounces	1	2	4	80
Each	\$0.30	.40	.50	.75



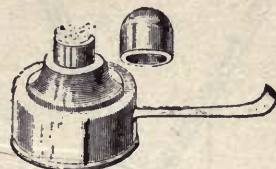
3322a



3322b



3322c



3322d

3322a LAMPS, Alcohol, polished brass, with screw top, in three sizes.

Capacity, ounces	2	4	8
Price	\$0.75	1.00	1.25

3322b LAMPS, Alcohol, polished brass, with screw top, ratchet burner, in two sizes.

Capacity, ounces	3	5
Price	\$1.25	1.75

3322c LAMPS, Alcohol, polished brass, nickel-plated, with screw top, ratchet burner, in two sizes.

Capacity, ounces	3	5
Price	\$1.00	1.50

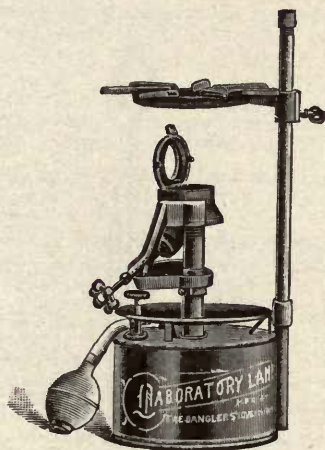
3322d LAMP, Alcohol, polished brass, nickel-plated, with screw top, small flame.

Capacity, 2 ounces. Price.....	\$0.75
--------------------------------	--------

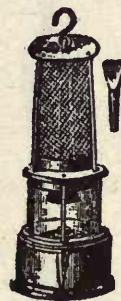
3322e LAMP, Alcohol, polished brass, nickel-plated, wick-holder lifts out, large flame. Capacity, 2 ounces. Price.....

1.00

3324 LAMP WICKS, per bundle..... .10



3326-28



3330

3326 LAMPS, Dangler's, for Gasoline, giving high or low flame.....\$ 9.00

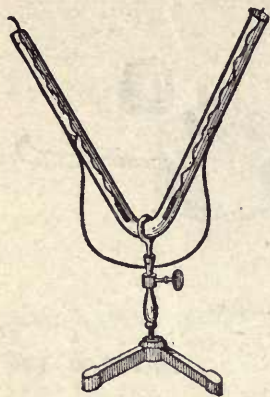
3328 LAMPS, Dangler's, with Copper reservoir..... 11.50

3330 LAMPS, Davy Safety or Miners'..... 7.50

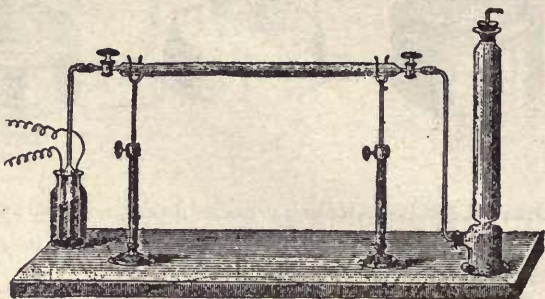
LAMPS. See also under Burners.

We carry a full line of e. p. chemicals. Prompt deliveries our specialty.

LECTURE APPARATUS



3334



3336

3334 LECTURE Apparatus for the electrolytical decomposition of hydrochloric acid, water and ammonia.

3334a The V shaped tube with stout platinum electrodes.....\$5.00

3334b The support 4.00

3336 LECTURE Apparatus to show that hydrochloric acid is produced by the combination of 1 vol. of Chlorine with 1 vol. Hydrogen, the apparatus consisting of tube, 2 tube supports, chloride of calcium jar, cylinder with widened mouth and decomposing cell.

3336a The tube only..... 5.50

3336b The tube supports only..... 4.50

3336c The decomposing cell only..... 6.75



3338



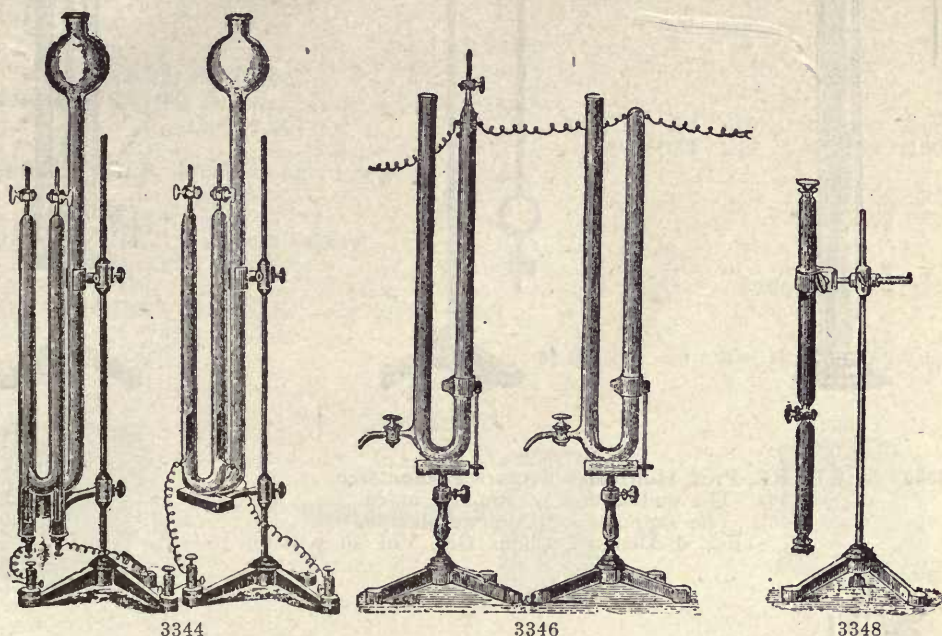
3342

3338 LECTURE Apparatus to ascertain the quantity of hydrogen contained in 1 vol. of hydrochloric acid.

3338a The tube, with 2 hollow glass stopcocks..... 5.00

3338b The support 5.00

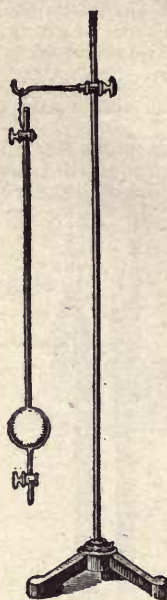
- 3340 **LECTURE** Apparatus to show the combination of 3 vols. of hydrogen with 1 vol. of nitrogen into 2 vols. of ammonia.
 3340a The tube, with 2 glass stopcocks.....\$ 7.50
 3340b The support..... 4.50
- 3342 **LECTURE** Apparatus to prove that water consists of 2 vols. of hydrogen and 1 vol. of oxygen.
 3342a The tube, with platinum electrodes..... 7.50
 3342b The tube, with graduated arms..... 10.00
 3342c The support, with binding screws for the poles..... 4.50



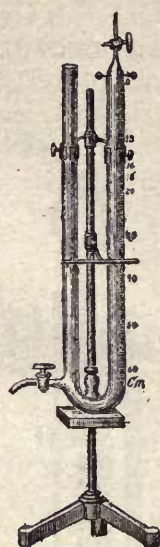
- 3344 **LECTURE** Apparatus for the simultaneous electrolytical decomposition of Water, Hydrochloric Acid and Ammonia; to show that 1 vol. of Hydrogen is combined with 1 vol. of Chlorine in Hydrochloric Acid, with $\frac{1}{2}$ vol. Oxygen in Water and with $\frac{1}{3}$ vol. of Nitrogen in Ammonia.
 3344a The tube with platinum electrodes.....\$ 9.00
 3344b Tubes with carbon electrodes, each..... 9.00
 3344c Supports with binding screws for the poles, each..... 9.00
- 3346 **LECTURE** Apparatus to show that Hydrogen and Oxygen are combined in the same proportions as they are liberated from Water by electrolysis.
 3346a Tubes with 2 glass stopcocks, each..... 7.50
 3346b The middle tube with glass stopcock, each..... 4.50
 3346c The supports, each..... 4.50
- 3348 **LECTURE** Apparatus to prove the invariable composition of Hydrochloric Acid.
 3348a The tube..... 4.50
 3348b The support with collar and holder..... 4.00
- 3350 **LECTURE** Apparatus to show that 2 vols. of Hydrogen are contained in 1 vol. of Marsh Gas.
 3350a The tube..... 7.50
 3350b The support..... 4.50
- 3352 **LECTURE** Apparatus to show that Ammonia contains 3 vols. of Hydrogen and 1 vol. of Nitrogen.
 3352a The tube, with stopcock, rubber stopper and connecting tubing..... 7.00
 3352b The cylinder, 36 inches high, with leaded base..... 8.50
- 3354 **LECTURE** Apparatus to prove that there is no alteration of volume by the combination of Hydrogen and Chlorine to Hydrochloric Acid, and that consequently 1 vol. of Hydrogen and 1 vol. of Chlorine produce 2 vols. of Hydrochloric Acid.
 3354a The tube..... 5.25
 3354b The support of iron..... 4.00
 3354c Small glass bulbs for sealing up carbon disulfid. Dozen..... 1.25



3352



3354



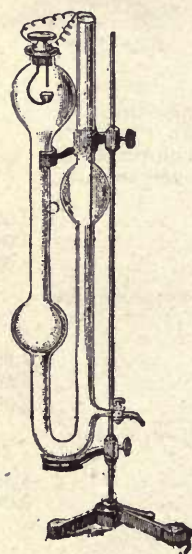
3356

3356 LECTURE, Prof. Hoffman's Lecture Eudiometer.

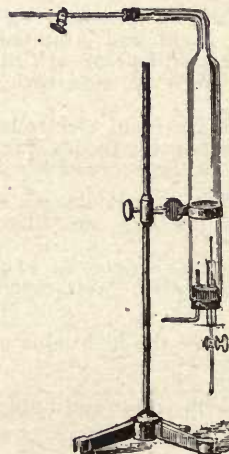
3356a The eudiometer, graduated in cc. \$ 9.00

3356b The support, with double clamps. 6.00

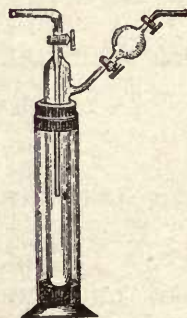
(Ber. d. Deutsch, Chem. Ges. Vol. 10, p. 250.)



3358



3360



3362

3358 LECTURE Apparatus to show that oxygen has the same volume as the carbonic acid and the sulfurous acid produced from it.

3358a The tube. \$ 9.00

3358c The support. 4.50

3360 LECTURE Apparatus for illustrating the phenomena of combustion.

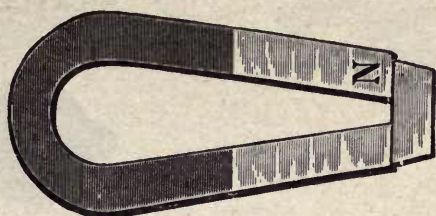
3360a The tube complete, with platinum burner, 2 glass stopcocks, etc. 7.50

3360b The support. 4.00

3362 LECTURE Apparatus for experiments with liquid sulfur dioxide. The apparatus, including cylinder. 7.50



3368



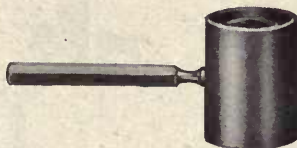
3374

LETTERS, see Dies.

3364 LEVELING Screws , brass, for balances, etc.									
For, gramme balance.....		50	100	200	500	1000			
Set		\$1.20	1.40	1.60	2.00	2.30			
3368 LEVELS , Spirit, mounted in brass frames.									
Length, inches.....					4	5	6		
Each					\$0.75	1.00	1.25		
3372 MAGNET , Bar, best quality.									
Length, inches.....				5	6	8	10		
Pair				\$0.30	.35	.40	.50		
3374 MAGNET , Horseshoe, best English steel.									
Length, inches.....		2	3	4	5	6	8	10	12
Each		\$0.10	.15	.25	.40	.50	1.10	1.80	2.50



A



B



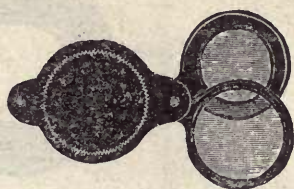
C

3375

- 3375 MAGNIFIERS, Doublet.** These doublet magnifiers are composed of two separate plano convex lenses, very carefully and accurately ground and polished, and substantially set in a rich black lacquered mount. Types B and C are nicked. They give excellent definition and an exceptionally flat field with greater working distance than is usually found in this type of lens. Three different styles of mounting are offered, according to the different purposes for which they are to be used.
- A—for dissecting stand.
 B—for desk use, with hexagonal handle.
 C—in folding pocket case.

Magnification		Focal Distance		Distance Working mm.	Real Field mm.	Mount.	Price
		Milli-meters	Inches Approx.				
A	6x	41.6	1.6	22	22	A—For Dissecting Microscopes	\$1.00
B	9x	27.8	1.1	15	16		1.00
C	12x	20.8	0.8	12	11		1.00
D	18x	13.9	0.5	8	8		1.25
E	24x	10.4	0.4	6	5.5	B Hexagon Handle	1.50
F	6x	41.6	1.6	22	22		1.00
G	9x	27.8	1.1	15	16		1.00
H	12x	20.8	0.8	12	11		1.00
J	18x	13.9	0.5	8	8	C Foldg Case	1.25
K	24x	10.4	0.4	6	5.5		1.50
L	6x	41.6	1.6	22	22		1.25
M	9x	27.8	1.1	15	16		1.25
N	12x	20.8	0.8	12	11		1.25
O	18x	13.9	0.5	8	8		1.50
P	24x	10.4	0.4	6	5.5		1.50

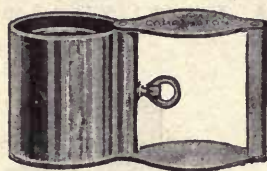
NICKELED MOUNTING



3378

These magnifying glasses are made in one, two, or three lenses, which may be used singly or in combinations for different magnifications.

		1-Lens	2-Lens	3-Lens
3376	Magnifying Glasses. Vulcanite Mounting, 1 inch diameter	\$0.50	.75	1.00
3378	Magnifying Glasses. Nickeled Metal Mounting, 1 inch diameter	\$0.55	.80	1.20



3380



3382



3384

These are genuine Coddington Magnifiers, very powerful, in nickel-plated folding cases.

3380 Magnifying Glasses, Coddington.

Diameter, in mms.....	20	25	30	35
Price	\$1.50	1.75	2.00	3.00

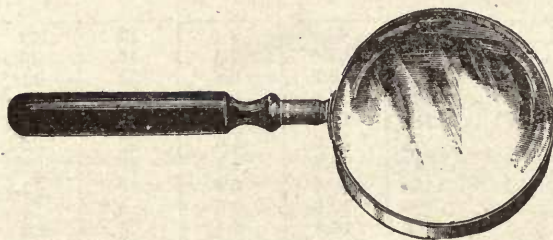
3382 Magnifying Thread Counters, in brass case.

Diameter open square, inch.....	1	$\frac{1}{4} \times \frac{1}{2}$	$\frac{1}{4}$
Price	\$1.50	.40	.40

3384 MAGNIFIER, Tripod Dissecting.

This dissecting magnifier gives a large, clear field and magnification sufficient for elementary work. The lens is focused by screwing it up or down in its frame.

Price, each.....\$1.50



3386

3386 MAGNIFIERS, Reading Glasses, metal frame, polished wooden handles.

Diameter of lenses, inches.....	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Each	\$0.80	1.00	1.50	2.00	2.50



A



B



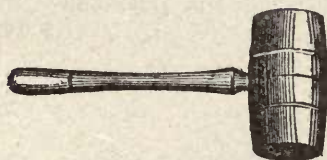
C

3387

3387 MAGNIFIERS, Triple Aplanat.

These lenses are remarkable for their great working distance and their unusually large, flat field. They are perfectly achromatic and free from distortion.

Magnification	Focal Distance		Working Distance mm.	Diam. Real Field mm.	Mount.	Price
	Milli- meters	Inches Approx.				
A 6x	41.6	1.6	36.8	20	A—For Dissecting Microscopes	\$3.50
B 9x	27.8	1.1	24.5	20		3.50
C 12x	20.8	0.8	18.4	15		3.50
D 18x	13.9	0.5	12.1	10		3.50
E 24x	10.4	0.4	9.2	7.5		3.50
F 6x	41.6	1.6	36.8	30	B Hexagon Handle	3.50
G 9x	27.8	1.1	24.5	20		3.50
H 12x	20.8	0.8	18.4	15		3.50
J 18x	13.9	0.5	12.1	10		3.50
K 24x	10.4	0.4	9.2	7.5		3.50
L 6x	41.6	1.6	36.8	30	C Fold'g Case	3.50
M 9x	27.8	1.1	24.5	20		3.50
N 12x	20.8	0.8	18.4	15		3.50
O 18x	13.9	0.5	12.1	10		3.50
P 24x	10.4	0.4	9.2	7.5		3.50



3388

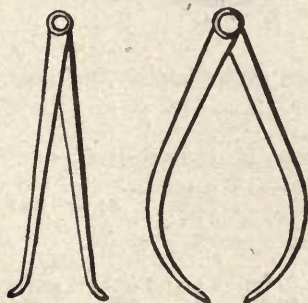


3390

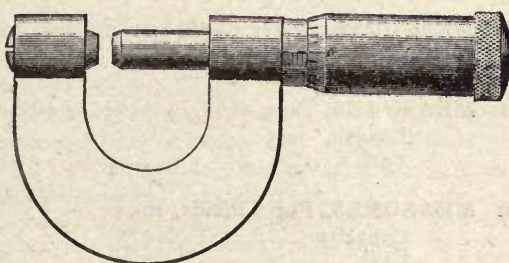
3388 MALLETS, hardwood **\$0.50**

3390 MALLETS, Rawhide end **1.75**

MANOMETERS, see Gauges.

MEASURES

3392

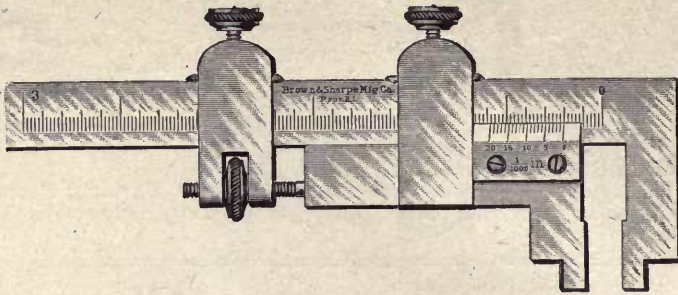


3396

3392 MEASURES, Calipers, in and outside 4-inch **\$0.50**

3394 MEASURES, Caliper, Micrometer, measures all sizes, less than 1/2-inch by thousandth of an inch **7.50**

3396 MEASURES, Caliper, Micrometer, graduated to read to hundredths of a millimeter **7.50**

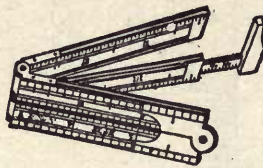


3398

- 3398 MEASURES, Caliper, improved Pocket Venier; metric and English measure.** Graduated on one side to read thousandths of an inch, the other side graduated to read a fiftieth millimeter.....\$10.00



3400



3402



3408

- 3400 MEASURES, Boxwood, with four folds, 2 feet; inches on one side, millimeters on the other side.....\$ 0.60**
- 3402 MEASURES, Folding, 1 foot, divided into inches on one side, centimeters and millimeters on the other, with caliper extension..... .75**
- 3404 MEASURES, Brass, with caliper, graduated into millimeters..... 1.50**



3412

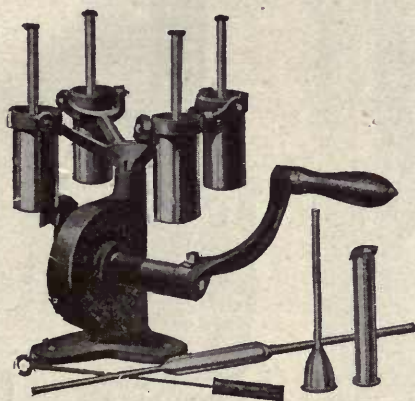


3414

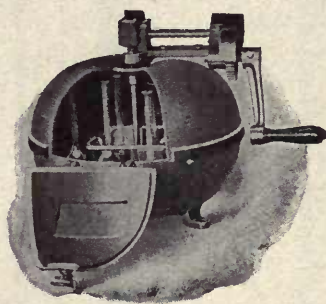
- 3406 MEASURES, Meter Stick, on one side graduated to $\frac{1}{8}$ -inch, on the other to millimeters\$ 0.50**
- 3408 MEASURES, Tape, steel, in inches and centimeters; in German silver case.**
- | | | | |
|-------------------|--------|------|------|
| Length, feet..... | 3 | 6 | 12 |
| Each | \$1.50 | 2.25 | 3.50 |
- 3410 MEASURES, For Liquids, tin.**
- | | | | | | |
|----------------|-------------------|-------|-------|--------------------|--------|
| Capacity | $\frac{1}{2}$ pt. | 1 pt. | 1 qt. | $\frac{1}{2}$ gal. | 1 gal. |
| Each | \$0.20 | .25 | .30 | .40 | .50 |
- 3412 MEASURES, Agate Ware, seamless.**
- | | | | | | |
|----------------|-------------------|-------|-------|--------------------|--------|
| Capacity | $\frac{1}{2}$ pt. | 1 pt. | 1 qt. | $\frac{1}{2}$ gal. | 1 gal. |
| Each | \$0.50 | .65 | .85 | 1.00 | 1.50 |
- 3414 MEASURES, Copper.**
- | | | | | | |
|----------------|-------------------|-------|-------|--------------------|--------|
| Capacity | $\frac{1}{2}$ pt. | 1 pt. | 1 qt. | $\frac{1}{2}$ gal. | 1 gal. |
| Each | \$0.75 | 1.00 | 1.25 | 1.75 | 2.50 |

MILK ANALYSIS APPARATUS

APPARATUS FOR SEPARATING FATS BY CENTRIFUGAL FORCE



3422



3424

- 3422 THE "OFFICIAL" BABCOCK TESTER**, a small, perfectly accurate, easy running, low priced hand tester. Has enclosed cut gears. Runs without noise, jar or friction. Fitted with thumb screw and clamp, so it can be clamped to table or screwed down.

Prices

No. 1-2 bottle, complete for testing milk, each.....	\$5.00
No. 2-4 bottle, complete for testing milk, each.....	6.00
No. 3-2 bottle, complete for testing milk and cream.....	5.75
No. 4-4 bottle, complete for testing milk and cream.....	6.75

Prices include full directions for making test, acid measure, piquette, test bottles, test bottle brushes and acid.

- 3424 THE TWENTIETH CENTURY BABCOCK HAND TESTER.** The hinged case iron cover opens downward on a spring. It cannot break. The Twentieth Century Babcock Hand Tester is operated with spur and worm gear, which gives the high speed necessary for a perfect test. It fills completely the demand for a high speed, accurate, durable, easily operated hand power tester. The perfect enclosure of the bottles does away with danger from flying acid and glass, should one of the bottles break.

Prices

4 bottles.....	\$10.00
6 bottles	11.25
8 bottles.....	13.50
10 bottles.....	14.50
12 bottles.....	17.50

BABCOCK CENTRIFUGE, International Make, see under Centrifuge.



3450



3426



3430



3446



3448

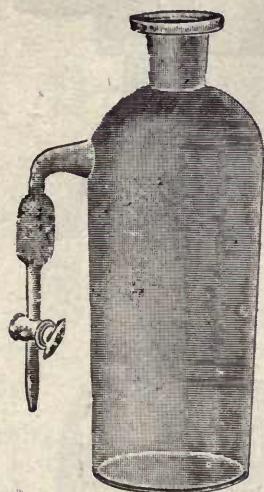


3451

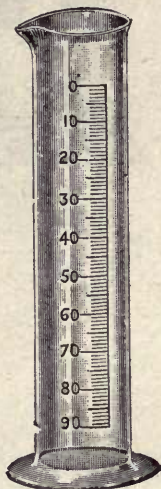


3456

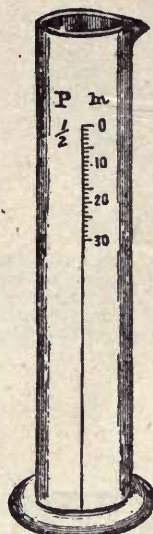
		Each	Dozen
3426	MILK TESTING BOTTLES, 10%, regular in 1/5%.....	\$0.30	\$2.00
3428	MILK TESTING BOTTLES, With etched tops.....	.30	2.00
	(If each bottle is packed separately in pasteboard box, 75 cents per gross additional.)		
3430	CREAM TEST BOTTLES, 30% in 1/2%.....	.40	4.00
3432	CREAM TEST BOTTLES, 40% or 50%, straight neck, in 1%.....	.50	5.00
3446	TEST BOTTLES, For skim milk, with double bore.		
	Graduated in 1/20%. Each.....		.75
3448	GRADUATES FOR ACID, 17.5 cc.....	.25	3.00
3450	ACID BURETTES, with stopcock holding.		
	Charges of acid of 17.5 cc. each.....	3 6 12 25	
	Price	\$2.50 3.00 4.00 6.00	
3451	FUNNELS, For test bottles, each, net.....		.20
3456	MILK PIPETTES, 17.6 cc., 20c; doz.....		2.00
3458	MILK and Cream Pipettes, 17.6 and 18 cc., 25c each; doz.....		2.25



3459



3460



3462



3463

- 3459 **ACID BOTTLE**, With 17.5 cc. Pipette, and stopcock. A very simple and practical acid measure. Each.....\$4.00
- 3460 **CREAMOMETER JARS**, Graduated 0-90—1½" dia. 10" long..... .75
- 3462 **CREAMOMETER JARS**, Graduated 0-30—2 " dia. 12" long..... .75
- 3463 **CASEIN TUBES**, Hart's..... 1.00



2467



2468



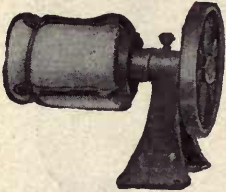
3470



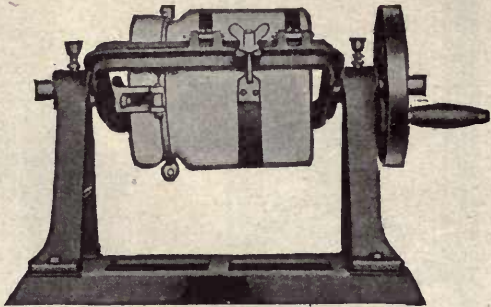
3474

- 3467 **ROEHRIG TUBE**, for the determination of fat in milk, cream, ice cream, skim milk, buttermilk, cheese, etc., by the Roese-Gottlieb method....\$2.00
- 3467(a) **ROEHRIG TUBE**, As above, with perforated glass stopper..... 3.00
- 3468 **LACTOBUTYROMETER**, Marchand's75
- 3470 **LACTOSCOPE**, Feser's on metal base. Complete, with directions in box.. 4.00
- LACTOMETERS**, see Hydrometers.
- 3474 **ALUMINUM DISHES**, For Milk Analysis.

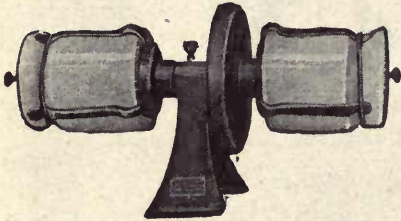
Diameter, inches.....	2	2½	3	3½	4
Height, inches.....	½	⅝	¾	⅞	1
Each	\$0.20	.30	.35	.45	.50



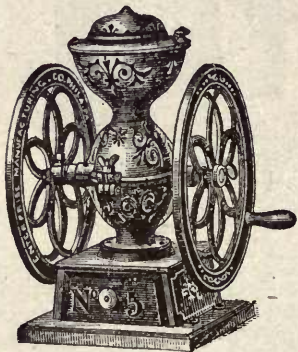
3475(a)



3475(c)



3475(b)

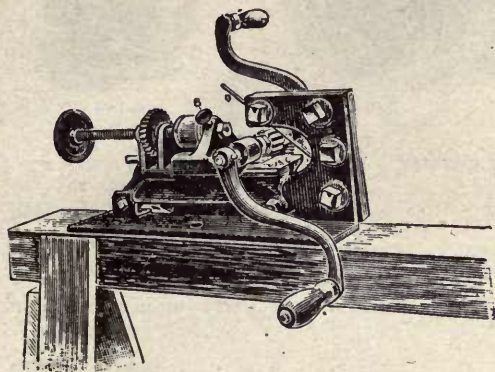


3676

- 3475(a) Single Specimen Mill**, 9x1 inch pulley; R. P. M., 80-120; floor space, 9x11 inches; jar measures, 5.2x5.71 inches; $\frac{1}{4}$ oz. to $1\frac{1}{2}$ lb. capacity
- Price\$18.00
- 3475(b) Double Specimen Mill**, 9x1 inch pulley; R. P. M., 80-120; floor space, 9x18 inches; jar measures, 5.2x5.71 inches; $\frac{1}{4}$ oz. to $1\frac{1}{2}$ lb. capacity.
- Prices 28.00
- 3475(c) MILL, Ball.** The jar measures, outside, 8.75x9.65 inches, will handle from a few ounces up to 5 pounds at a charge; shipping weight, 120 pounds; floor space, 10 $\frac{1}{2}$ x25 inches. Hand wheel-pulley, 9x1 inches, 60 R. P. M.
- Price 44.00

3676 MILLS, Laboratory, for grinding roots, herbs, seeds, etc.

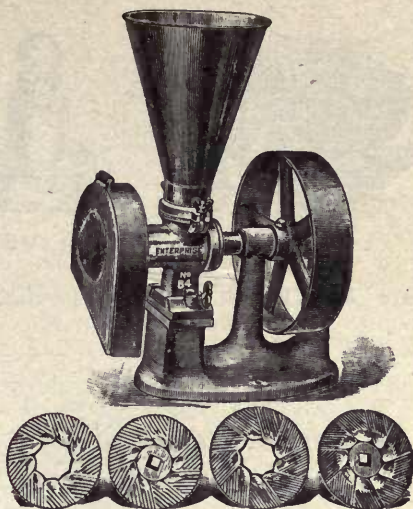
No.	2	3	5	7
Height, inches	12 $\frac{1}{2}$	15	17	21 $\frac{1}{2}$
Weight, lbs.	15	22 $\frac{1}{2}$	36	62
Each	\$5.50	8.25	12.00	16.50



3477

3477 MILLING MACHINE, Johnson's, for taking samples of irregular shaped steels, etc. \$35.00

3477(a) MILLS, with pulley for power, grinding cereals, cocoa beans, vanilla beans, white lead massage creams and for reducing other materials to pasty consistency. The feeding cylinder is octagonal and permits the feed shaft to grasp the material in the most effective way; all parts are heavily tinned. Height, 24 inches; length, 12 inches. Pulley, 12x3/4 inches. Requires 2 to 3 H. P. motor for 300 R. P. M. 60.00



3477(a)

3477(b) MOISTURE APPARATUS, Brown-Duvel's, adopted by the Bureau of Plant Industry, U. S. Department of Agriculture. These testers were developed primarily to meet the needs of grain-dealers for a rapid and exact method of determining the moisture in corn.

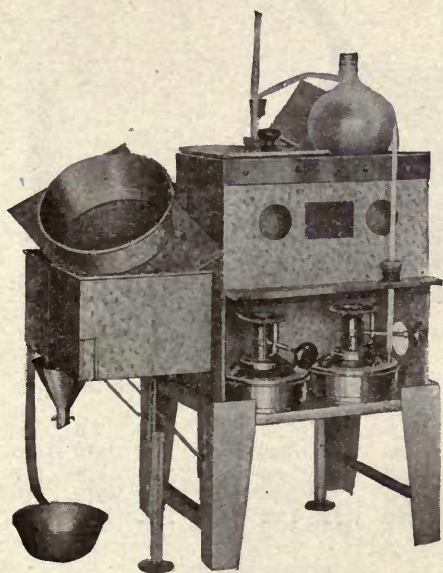
They are made in sizes for one, two, four or six complete tests at one time, and are equipped with either alcohol, gas or electric heat. Compactness is a big feature of this machine.

Two compartment, alcohol or gas burners \$40.00

Four compartment, alcohol or gas burners 55.00

Six compartment, alcohol or gas burners 70.00

Electrically heated at \$8.00 per compartment, in addition to the above prices. (Specify 110 or 220 volts.)



3477(b)

These prices include one gallon Testing Oil, one gallon Alcohol, Automatic Oil Measuring and Grain Separating Devices, all necessary accessories, but do not include scale. An accurate scale for weighing in grams is essential. Specify either Special "Four-in-One" Scale or Harvard Trip Balance. (See Laboratory Scales.)

Condensing tank on two-burner size machine will not be equipped for running water unless specified. Prices subject to change without notice.

SEPARATE PARTS

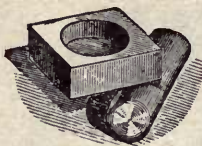
Distillation flasks of glass	\$1.00
Thermometers	2.00
Graduated cylinders, cap. 25 c.c. ....	.75
Condensing tubes .....	.25
Graduates for measuring oil, 150 c.c. ....	.75
Wire gauzes .....	.15
Special rubber stoppers for distillation flasks .....	.15



3478



3482



3484



3488

3478 MORTARS, Agate, with pestles; best quality.

Dia. mm.	40	50	65	75	90
Each	Prices upon application				
Dia. mm.	100	115	125	140	150
Each	Prices upon application				

3489 MORTARS, Agate and pestles, mounted in wood.....Prices upon application**3482 MORTARS, Diamond, Plattner's.**

	Small.	Large.
Each	\$5.00	7.50

3484 MORTARS, Steel, Diamond, Leed's..... 3.00**3488 MORTARS, Glass, with lip and pestle.**

Capacity, oz.	1	2	4	8	16	32
Each	\$0.20	.30	.40	.50	.80	1.00



3490



3494



3492

3490 MORTARS, Porcelain, with Pestles, with lip, rough inside, glazed outside. Pestles all porcelain; medium deep form.

Size No.	0	1	2	3	4	5	6
Capacity, about c.c.....	75	185	375	360	450	680	1070
Height, about m.m.....	45	59	85	80	85	95	108
Diameter, about m.m.....	70	100	126	140	160	177	210
Each	\$0.35	.55	.85	1.05	1.20	1.35	1.60
						2.20	

3491 PESTLES, Porcelain. Glazed, excepting end used for grinding.

Size No.	1	2	3	4	5
Length, m.m.	98	118	180	190	205
Each	\$0.15	.25	.30	.40	.60

3492 MORTARS, Porcelain, deep for, with lip, glazed outside with porcelain pestle. Size number 0; dia. 95 m.m; height 64 m.m; capacity 200 c.c.; length of pestle 113 mm. Each.....\$0.75**3494 MORTARS, Wedgewood, pestle with wooden handle.**

No.	0000	000	00	0	1	2	3	4
Dia., inches	3	3¼	3½	4	4½	5	6	6½
Each	\$0.70	.80	.90	1.00	1.10	1.30	1.80	2.00
No.	5	6	7	8	9	10	11	12
Dia., inches	7	8	8½	9½	10½	12	13	14
Each	\$2.50	3.25	3.75	4.50	6.00	7.50	8.00	10.00



3498



3499



3499(a)

3498 MORTARS, Iron, bell shape, with pestle.

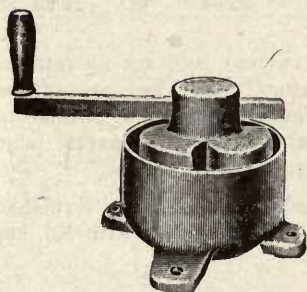
Approx. capacity	$\frac{1}{2}$	1	2	4 pt.	1	2	3 gal.
Diameter, inches	4	5	$5\frac{1}{2}$	$6\frac{1}{2}$	9	11	14
Each	\$0.50	.85	1.20	1.75	2.50	5.00	8.00

3499 MORTARS, Iron, No. 1, high style. Best quality for powdering ore.

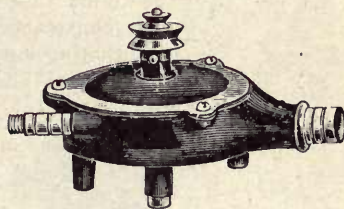
Capacity	1 pt.	1 qt.	$\frac{1}{2}$	1	2	3 gal.
Each	\$0.60	.90	1.25	2.25	4.00	6.00

3499(a) MORTARS, Steel. Polished inside and out; with pestle.

Diameter, c.m.	9	12	15
Each	\$2.50	3.00	4.50



3500



3501

3500 MORTARS, Buck's improved, of iron, especially adapted for grinding and amalgamating. Through the manner in which the muller is constructed, the contents of the mortar again pass under the muller.

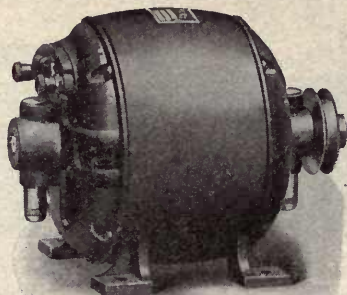
Diameter, inches	$6\frac{1}{2}$	$8\frac{1}{2}$
Weight, pounds	30	76
Weight Muller, pounds	16	49
Price, each	\$7.50	10.00

3501 MOTOR, for water, steam or compressed air. This motor can be attached to an ordinary apparatus stand and used for either stirring or shaking. Size, 5 inches diameter. Revolutions attained according to water pressure, as follows:

20	30	40	50	60 pounds water press.
2300	2800	3400	3850	4200 revolutions per min.
Price	\$7.50			



3503



3503(a)

3503 MOTOR, Series Intermittent Service, alternating and direct current. Machines or devices that have a fixed load can be successfully driven by series type motors, but where the load varies and it is necessary to maintain a constant speed at all times, regardless of the load fluctuation, this type of motor will not answer the requirements fully. For uses such as driving small fans, air pumps, centrifuges, etc., these little motors will be found preferable.

Data

Frame	H. P.	Volts	Cycles	Weight	Price
C-1	1/80	110	D. C.	34 oz.	\$11.30
C-1	1/80	110	60	34 oz.	11.30
C-2	1/50	110	D. C.	45 oz.	12.35
C-2	1/50	110	60	45 oz.	12.35
C-3	1/30	110	D. C.	55 oz.	13.50
C-3	1/30	110	60	55 oz.	13.50

3503(a) MOTORS, Electric. These motors are for direct current, and are guaranteed by us to be thoroughly first-class for laboratory use. They are of the bi-polar construction, having an external appearance somewhat similar to the alternating current type. The two end shields are made separate from the field frame, allowing free access to the internal parts.

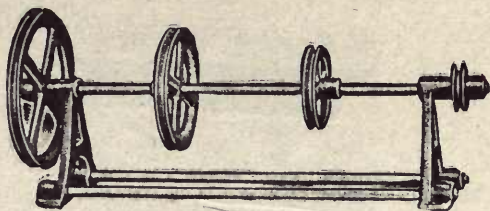
Pulleys—Single groove for round belt, 2-inch pitch diameter, furnished with Nos. 28 and 26 frames; 2½-inch pitch diameter furnished with No. 26s frame.

Data

Frame	H. P.	Volts	Load Speed	Winding	Net Wgt.	Price
28	1/10	110	1125	Shunt	21	\$27.00
28	1/10	220	1152	Shunt	21	29.00
26	1/8	110	1125	Shunt	24	31.00
26	1/8	220	1125	Shunt	24	33.50
28	1/8	32	1725	Shunt	21	29.00
28	1/8	110	1725	Shunt	21	27.00
28	1/8	220	1725	Shunt	21	29.00
26	1/6	32	1725	Comp.	24	33.50
26	1/6	110	1725	Shunt	24	31.00
26	1/6	220	1725	Shunt	24	33.50
26s	1/4	32	1725	Comp.	26	39.50
26s	1/4	110	1725	Comp.	26	37.00
26s	1/4	220	1725	Comp.	26	39.50



3503(b)



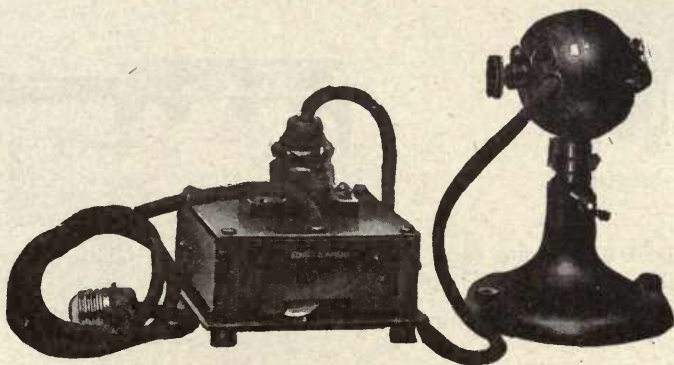
3503(c)

3503(b) MOTOR, Electric, A. C. These motors for alternating current are of the split phase induction type, without commutator or brushes. The assembly consists of four essential parts: the stator, carrying the winding; the rotor, or revolving element, and two end shields supporting the shaft.

Pulleys—Single groove for round belt, 2-inch pitch diameter, furnished with Nos. 18 and 16 frames, 2½-inch pitch diameter furnished with No. 14 frame.

Data

Frame	H. P.	Volts	Load Speed	Cycles	Net Wgt.	Price
18	1/10	110	1125	60	23	\$35.12
18	1/10	220	1125	60	23	39.90
16	1/8	110	1125	60	28	42.68
16	1/8	220	1125	60	28	43.44
14	1/6	110	1125	60	32	49.22
14	1/6	220	1125	60	32	50.00
18	1/8	110	1725	60	23	38.08
18	1/8	220	1725	60	23	38.86
16	1/6	110	1725	60	28	41.62
16	1/6	220	1725	60	28	42.40
14	1/4	110	1725	60	32	48.04
14	1/4	220	1725	60	32	48.82



3503(d)

3503(c) MOTOR, Pulleys, with shaft and bearings, as shown in illustration, for connecting engine with other machinery. Diameter of pulleys, 1, 2, 3 and 4 inchesNet \$1.50

3503(d) MOTOR, Universal Laboratory, 60 H. P., suitable for both alternating and direct current; complete with rheostat and plug and connecting cordNet 17.50

(When ordering, be sure to state voltage.)

MOULDS



3504



3506

- 3504 MOULDS, Ingot, or Bullion, making a bar $1\frac{1}{2} \times 1\frac{1}{2} \times 8$ inches, with slide to cast any length desired \$1.50
- 3506 MOULDS, Ingot, quadruple, for sample bars..... 1.00



3508



3509

- 3508 MOULDS, Pouring Iron, with handles, 2 cavities drilled smooth..... 1.00
- 3509 MOULDS, Pouring. Heavy solid iron, with 2 conical depressions, $2\frac{1}{8}$ inches diameter, $1\frac{5}{8}$ inches deep, wood handles, for crucible and scori-fication assays, each 1.50



3509(a)



3509(c)

- 3509(a) MOULDS, Pouring. Heavy, solid iron, with 6 conical depressions, $2\frac{1}{4}$ inches diameter, $1\frac{5}{8}$ inches deep, solid iron handle. The slag will cool rapidly, each 3.00
- 3509(b) MOULDS, Pouring. Same as above, but with 8 depressions, each..... 5.00
- 3509(c) MOULDS, Pouring. As above, with 6 conical depressions, 2 inches diameter, $1\frac{3}{8}$ inches deep, with iron ring handle, each..... 3.00



3509(d)



3510

- 3509(d) MOULDS, Pouring. For large crucibles, one only large depression, 6 inches diameter, 5 inches deep, each..... .80
- 3510 MOULDS, Iron, with handles, 3 conical cavities turned inside..... 1.00

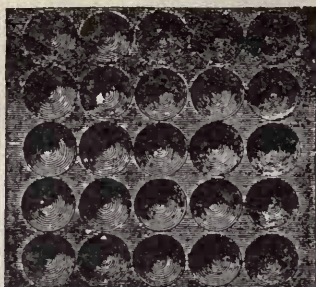


3512



3516

- 3512 MOULDS, Iron, with 12 conical cavities..... 1.00
- 3516 MOULDS, Cast Iron, 6 cavities, with handle..... .90

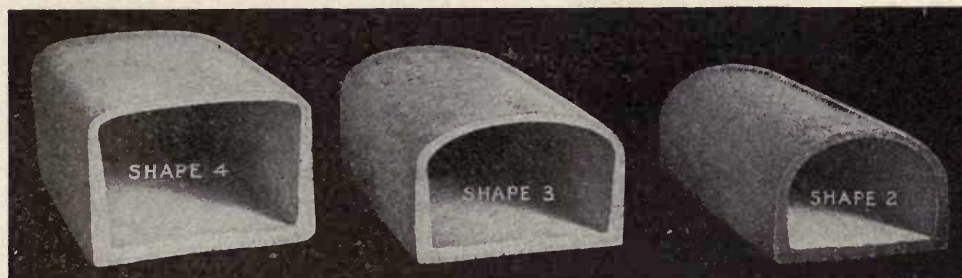


3518



3519

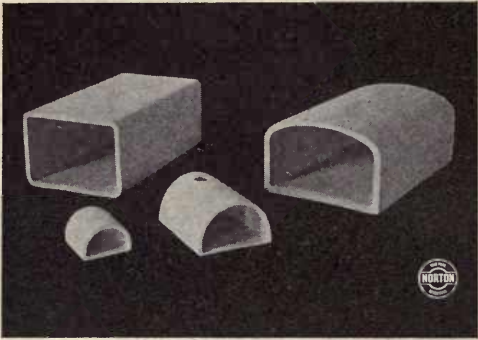
3518 MOULDS, Pouring, Cast Iron, with 25 spherical depressions; for crucible or scorification assays\$1.50



3519 MOULDS, Pouring, as above, with 12 spherical depressions..... 2.00
3520

3520 MUFLERS, Denver. Order by letters or numbers and shape.

Outside Measurements Always used in specifying Muffles				Inside Measurements For determining capacity				
Letter	Width, Inches	Length Inches	Height, Inches	Shape	Width, Inches	Side Height, Inches	Greatest Height, Inches	Each
AAA	2½	6	1⅞	2	.....	.....	.....	\$0.50
AA	3	7	2¼	2	.....	.....	.....	.50
BB	3½	6	2½	2	.....	.....	.....	.50
CC	4¾	8	3	2	.....	.....	.....	.60
C	4¾	8	3	2	.....	.....	.....	.60
HH	5¼	7⅞	4¼	2	.....	.....	.....	.60
H	5¼	10½	3⅞	2	.....	.....	.....	.75
CJ	6	12	4	2	4⅞	1¾	3¼	.90
CF	6	9	4	2	5¼	2	3½	.75
F	6	10	4	2	5¼	.....	3⅞	.75
FF	6	10	4	3	5¼	.....	3⅞	.75
J	6	12	4	3	4⅞	.....	3⅞	.90
D	7	10	4¾	2	6	.....	3½	.75
CD	7	10½	4¾	3	5⅞	.....	3½	.75
DD	7	12	5	4	6⅞	3¾	4⅞	1.00
G	7	12	4½	3	6	2½	3⅝	1.00
GG	7	14	5	3	6	2¾	3⅞	1.20
KK	8	12	5	3	6⅝	2½	4	1.15
KKK	8	13	4⅞	2	6¾	.....	3¾	1.20
K	8	14	5	3	7	2½	4	1.25
LLL	9	14½	5½	3	7⅝	2¾	4	1.50
L	9	15	5¾	3	7⅝	.....	4½	1.50
LL	9	15	5¾	3	7¾	2¾	4⅝	1.50
FHN	9	16	6	3	7⅝	3¼	4¾	1.50
I	10	16	6½	2	8¾	2⅞	5	1.75
II	10	16	6¾	3	8½	3⅞	5⅞	1.75
CII	10	16½	6¾	3	8½	3⅞	5⅞	1.75

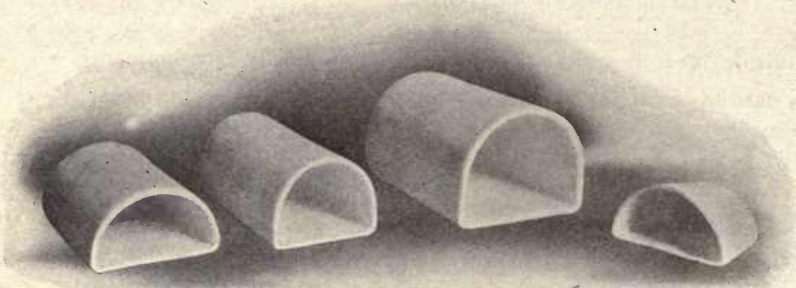


3521

3521 MUFFLES—Alundum, recommended for furnaces, heated by electricity, may be wound with a resistor, covered with alundum cement. Rectangular shape, open at both ends.

No.	201	202	203	204
Length, inside, inches.....	7	10	12	14
Width, inside, inches.....	3 ³ / ₈	4 ¹ / ₄	5 ¹ / ₄	7 ¹ / ₂
Height inside, inches.....	2 ¹ / ₂	3	3 ³ / ₄	5 ¹ / ₄
Each	\$2.50	4.00	5.00	7.00

The above muffles may be had with one end closed at 10% additional to the above prices. Other sizes and shapes made to order.



3521(a)

3521(a) MUFFLES—Fused Silica, withstand sudden and extreme change of temperature. Suitable for use in gas, oil or electric furnaces, or may be directly wound with resistance wire for electric heating. D shape.

Length, inches	4 ¹ / ₂	6 ¹ / ₂	9 ¹ / ₂	9 ¹ / ₂	11 ³ / ₄
Width, inches	2 ⁵ / ₈	4 ³ / ₈	6 ¹ / ₈	5 ⁷ / ₈	6 ¹ / ₄
Height, inches	2 ³ / ₈	3 ¹ / ₂	4 ¹ / ₂	5	4 ³ / ₈
Each	\$1.85	2.50	3.75	4.25	5.00

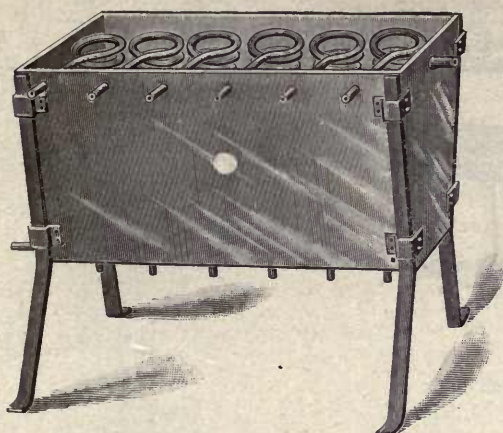
Prices for other sizes upon application.

3521(b) MUFFLES—Fused Silica, as above, but of rectangular shape.

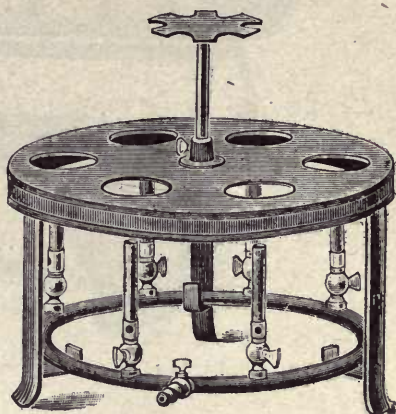
Length, inches	7 ¹ / ₈	10	12
Width, inches	3	4 ³ / ₈	5 ¹ / ₂
Height, inches	3	2 ⁷ / ₈	4
Each	\$2.50	3.75	5.00

Prices for other sizes upon application.

NITROGEN DETERMINING APPARATUS



3522

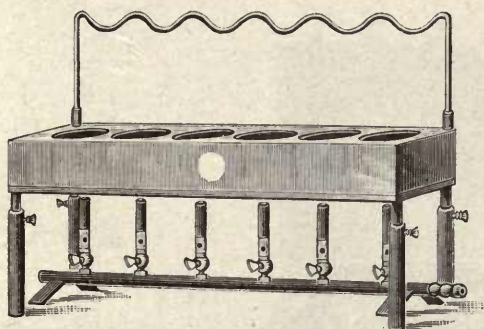


3523(a)

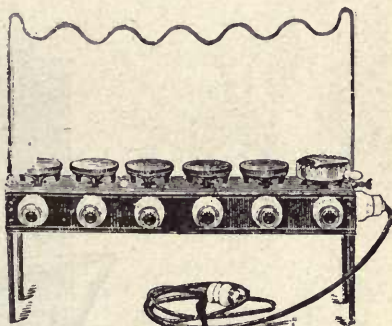
- 3522 CONDENSER (Kjeldahl's)**, copper, tin-lined, with six coils of pure block tin, size of apparatus 24 inches long, 6½ inches wide, 14 inches deep; height, including legs, 24 inches.
 Price\$25.00

- 3523 CONDENSER (Kjeldahl's)**, same as above, but with ten coils; size of apparatus, 40 inches long, 6½ inches wide, 14 inches deep; height, including legs, 24 inches.
 Price 42.50

- 3523(a) DIGESTING SHELF (Kjeldahl's)**, round form, 16 inches diameter, 10 inches high, with six burners, each with stop-cock..... 21.50



3524

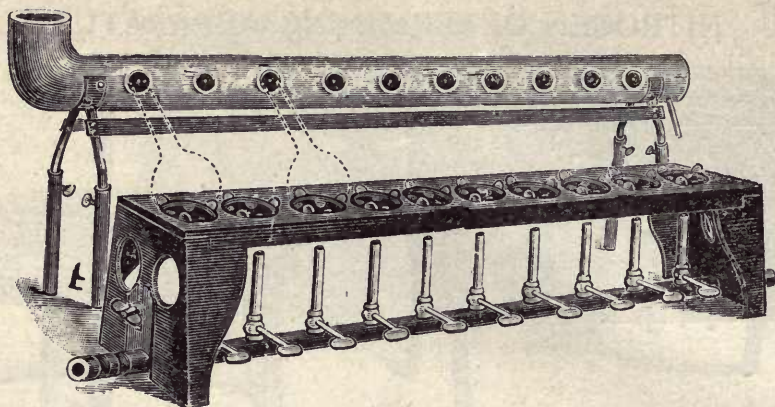


3525(a)

- 3524 DIGESTING SHELF (Kjeldahl's)**, oblong form, made of sheet iron, with rod to support the flasks. The shelf is supported on adjustable legs. Six burners in a row, each with stop-cock. Size of apparatus, 24 inches long, 5½ inches wide, 9½ inches high.
 Price 18.00

- 3525 DIGESTING SHELF (Kjeldahl's)**, oblong form, with ten burners. Size of apparatus, 40 inches long, 5½ inches wide, 9½ inches high.
 Price 24.00

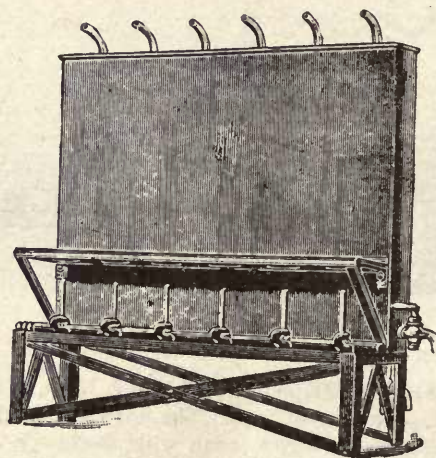
- 3525(a) DIGESTING SHELVES (Kjeldahl's)**, electrically heated, oblong form, 5½ inches wide and 9 inches high, made of sheet iron, with rod to support the flasks. Each Heater, which is 3½ inches diameter, is a unit, either one or all may be used at one time, as desired.
 Digesting Shelf—six heaters, 24 inches long..... 70.00
 Digesting Shelf—ten heaters, 40 inches long..... 100.00



3525(b)

3525(b) KJELDAHL DIGESTING SHELVES, Johnson, as used in the Connecticut Agricultural Experimental Station; made of heavy cast iron, $6\frac{1}{2}$ inches wide and $8\frac{1}{2}$ inches high. The holes are $4\frac{1}{2}$ inches from center to center, have projections shaped to support Kjeldahl Flasks; heated by a row of Bunsen Burners, each with a stopcock. The Flasks are supported by resting their necks in a large lead pipe connected with the flue for carrying away the fumes; the lead pipe rests on adjustable stand. Complete as shown above, in three sizes:

For 6 Flasks, length 29 inches.....	\$30.00
For 10 Flasks, length 46 inches.....	40.00
For 13 Flasks, length 60 inches.....	50.00

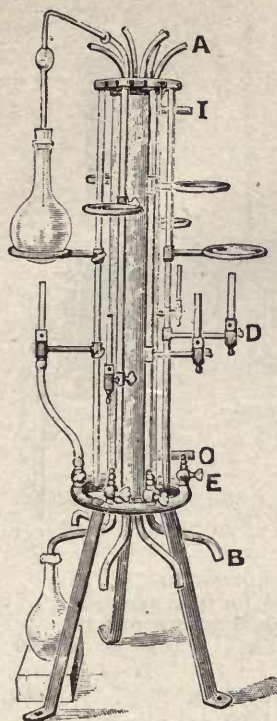


3527

3527 KJELDAHL DISTILLING APPARATUS, Kjeldahl's, on stand, especially suited to the requirements of water and food chemists in determination of Ammonia and Nitrogen. Very convenient form, made to stand on the table as shown in above illustration or to hang on the wall, with adjustable Bunsen Burners which can be individually regulated to any size flame.

Condenser is made of heavy polished copper, tinned inside, and with block tin condenser tubes. Size, 32 inches long, 24 inches high and 3 inches wide. The stand is $8\frac{1}{2}$ inches high..... 55.00

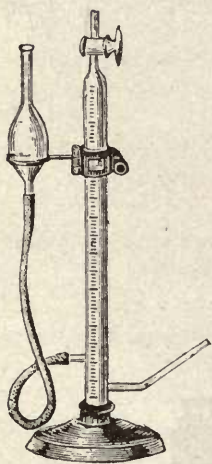
3527(a) DISTILLING APPARATUS, same as above, but to hang on wall..... 50.00



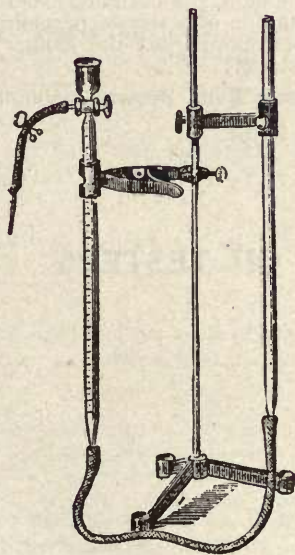
3531

3531 DISTILLING APPARATUS, for carrying on as many as six distillations at one time, for experiment stations and other large laboratories. Adapted to Kjeldahl distillation, Leffmann, Beam and Reichert butter methods, wine and spirit determinations, etc. This is a very convenient apparatus, occupying only 15 inches square of table room. It is substantially made, the condenser of copper, with block tin tubing, gas connections, adjustable burners and ring supports. Extreme height of the apparatus is 44 inches.

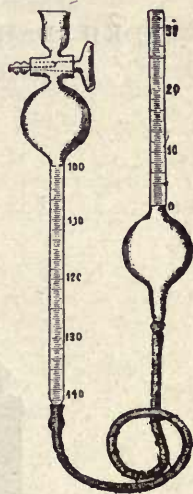
Price\$65.00



3532

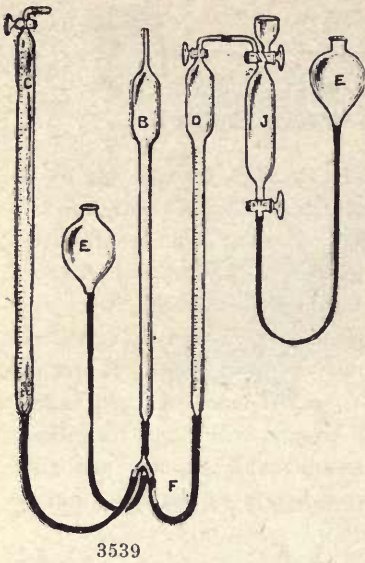


3536



3538

- | | |
|---|-------------|
| 3532 SCHIFF'S Nitrometer , graduated to 100 c.c., on support, with reservoir and and clamp and connections..... | 7.50 |
| 3536 LUNGE'S Nitrometer , for saltpetre, nitroglycerine, etc., graduation 50 c.c. in $1/10^\circ$, without support..... | 7.50 |
| 3538 LUNGE'S Nitrometer for saltpetre, soda nitrate, nitroglycerine, etc., graduated from 100 to 140 c.c. in $1/10^\circ$, without support..... | 7.50 |

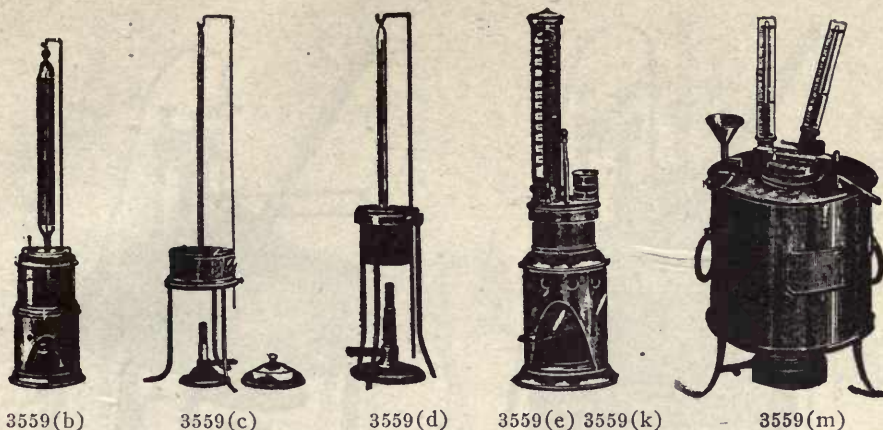


3539	NITROMETER, duPont's. A most accurate apparatus for the analysis of nitric acid and mixed acids; used by many manufacturers of explosives, etc. Complete set of glass parts.....							\$26.00
3541	Ditto, separate glass parts.							
	E	B	D	J	E	F	C	
	\$2.00	2.50	6.50	7.50	2.00	0.60	7.00	
3554	KJELDAHL'S Connecting Bulb Tubes, 50 c.c., each.....							.50
3556	KJELDAHL'S Connecting Bulb Tubes, Hopkins' form.....							.50
3557	KJELDAHL'S Connecting Bulb, Kjeldahl's, modified by C. A. Jennings, having a tubule in the bulb, and designed especially for water analysis; allows of the introduction of water or permanganate solution without removing the stopper, eliminating the danger of the introduction of ammonia into the flask.....							.75
3557(a)	KJELDAHL'S Connecting Bulb, Brown's, cylindrical shape.....							.80
	Nitrogen Bulbs, see Bulbs.							

OIL TESTERS



3559	ELLIOTT Tester for flash points of illuminating oils only, with standard thermometer	15.60
3559(a)	FOSTER Tester for flash points of illuminating oils only, with standard thermometer	18.00



- 3559(b) CELERITAS Improved Open Tester**, for flash and fire tests of illuminating oil, with standard thermometer. Equipped with gas flame testing burner. The flame from the gas burner can be regulated by stopcock; must be no larger than the white button shown in cut at left of thermometer. The testing burner is used with wheel for the dip test; without wheel for the bar or cross test. **\$10.00**
- 3559(c) CLEVELAND Open Tester**, for flash and fire tests of high grade lubricating oil. This is the most substantial tester on the market; it is made of heavy brass castings, complete with standard solid glass thermometer 80° to 640° F., with spirit lamp and Bunsen burner for gas **18.00**
- 3559(d) CLEVELAND Open Tester**, for flash and fire tests, small size, similar to No. 3559(c), but of lighter construction. Complete with thermometer and Bunsen burner **12.00**
- 3559(e) Large Pyrometer**, for flash and fire tests of illuminating oils, with standard thermometer 50° to 170° F. **32.40**
- 3559(f) Large Pyrometer**, for flash and fire tests of illuminating oils, with standard thermometer 80° to 250° F. **32.40**
- 3559(g) Large Pyrometer**, for flash and fire tests of lubricating oils, 80° to 400° F., with Bunsen burner and thermometer. **38.90**
- 3559(h) Large Pyrometer**, for flash and fire tests of lubricating oils, 200° to 600° F., with Bunsen burner and thermometer. **38.90**
- 3559(j) Small Pyrometer**, for flash and fire tests of illuminating oils, 50° to 170° F., with standard thermometer. **28.80**
- 3559(k) Small Pyrometer**, for flash and fire tests of illuminating oils, 80° to 250° F., with standard thermometer **28.80**
- 3559(m) ABEL Closed Oil Tester**, for illuminating oils; complete with two Standard Ivory Scale Thermometers. Each cup examined and passed by the Royal Petroleum Association of England. Adopted as standard by the British Government. In hardwood case, with directions for use **75.00**

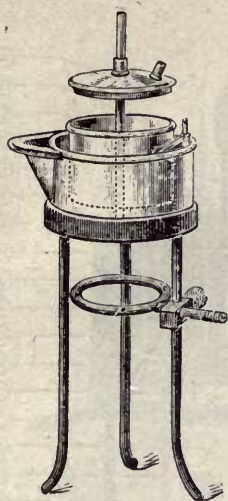


3559(n)
For Low Flashing Oils



3559(p)
For High Flashing Oils

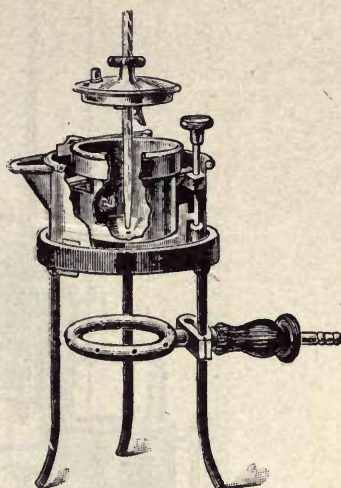
- 3559(n) U. S. Bureau of Mines Flash Tester, for oil flashing from 0° to 110° C.**
Three thermometers, cup lifter, burner and Aneroid barometer.
Complete in case with directions for operation.....\$135.00
- A. Porcelain Scale Thermometer for oil cup. Range 0° to 50° C.
in ½° graduations. Round bulb..... 7.50
 - B. Same as No. A, except Range 40° to 110° C..... 7.50
 - C. Porcelain Scale Thermometer, for water bath. Range 0° to 85° C.
1° graduations. Cylinder bulb 7.50
- 3559(p) U. S. Bureau of Mines Flash Tester, for oil flashing from 100° to 310° C.**
Two thermometers, cup lifter and burner. Complete in case with directions for operation..... 120.00
- A. Porcelain Scale Thermometer for oil cup. Range 100° to 210° C.
in 1° graduations. Round bulb..... 7.50
 - B. Same as No. A, except range 200° to 310° C..... 7.50
 - C. Same as No. A, except range 300° to 410° C..... 9.00
 - D. Oil Containing Cup only for Nos. 3559(n) and 3559(p)..... 7.50
- 3559(q) REDWOOD'S Viscosimeter for Lubricating Oil, with flask and thermometers.** Certified for accuracy by the Redwood Laboratories.
In case. One of the standard forms of Viscosimeters, extensively used in this country and abroad, especially in England..... 75.00
- A. 10½-inch Engraved Stem Thermometer for No. 3559(q). Range
50° to 145° F., in ½° graduations. For oil container..... 2.25
 - B. 12-inch Engraved Stem Thermometer for No. 3559(q). Range
50° to 160° F., in 1° graduations. For water bath..... 2.25
- 3559(r) REDWOOD'S Viscosimeter for Fuel Oil, with flask and thermometers.** Certified for accuracy by the Redwood Laboratories..... 127.50



3559(s)



3560



3560(a)

3559(s) ENGLER'S Viscosimeter; latest improved form; insulated oil container cover, deep water bath with stirrer; gold-plated oil container, platinum outlet. Complete with thermometers, ring-burner and flask. This instrument is considered one of the most accurate and reliable instruments by the best authorities in this country.....\$75.00

8½-inch Porcelain Scale Thermometer for No. 3559(s). Range 10° to 50° C., in 1° graduations..... 6.00

Same as No. 3559(s), except Range 10° to 150° C..... 7.50

Same as No. 3559(s), except Range 10° to 200° C..... 9.00

Flask, graduated 100 c.c.-100 c.c., for No. 3559(s)..... 4.50

3560 SCOTT'S Viscosimeter, an accurate, reliable instrument, designed by Mr. W. G. Scott. This instrument is so constructed that the reservoir may be readily removed and cleaned. The results obtained compare closely with those of higher priced instruments. Each instrument is accurately standardized and has the time in seconds and fractions thereof required for 50 c.c. of distilled water at 70° F. to be discharged stamped upon the handle of the cup. The temperature of the liquid to be tested is accurately regulated by water or liquids of higher boiling points which surround the reservoir. The Viscosimeter with good thermometer graduated to 212° F. in single degrees and with a 50 c.c. graduated cylinder 15.00

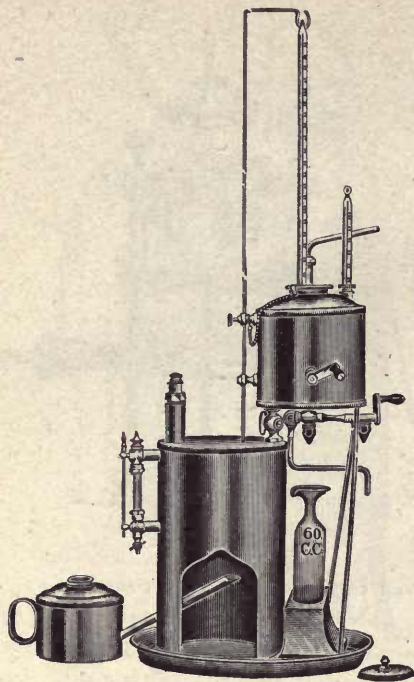
For taking the viscosity of lubricating oils an accurate finely graduated thermometer is quite essential. For this purpose we are prepared to supply a high grade thermometer graduated from 50° to 120° F., in 1-5 degrees 5.00

3560(a) ENGLER'S Viscosimeter, modified by Ubbelohde, for very fluid liquids, such as petroleums. Complete with two thermometers..... 85.00

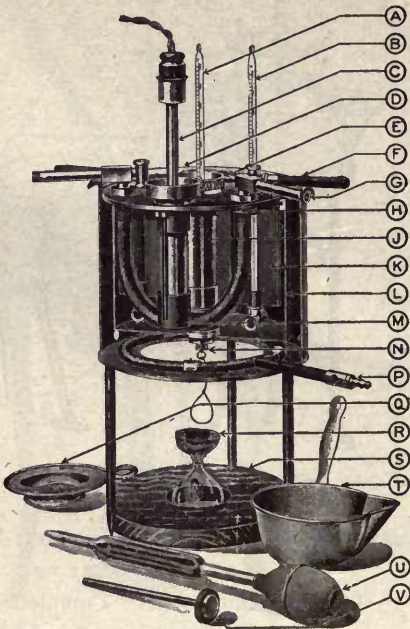


3560(b)

3560(b) Viscosimeter, as adopted by the Pennsylvania Railroad, delivers 100 c.c. of distilled water in 34 seconds at a temperature of 100° F..... 2.00



3561



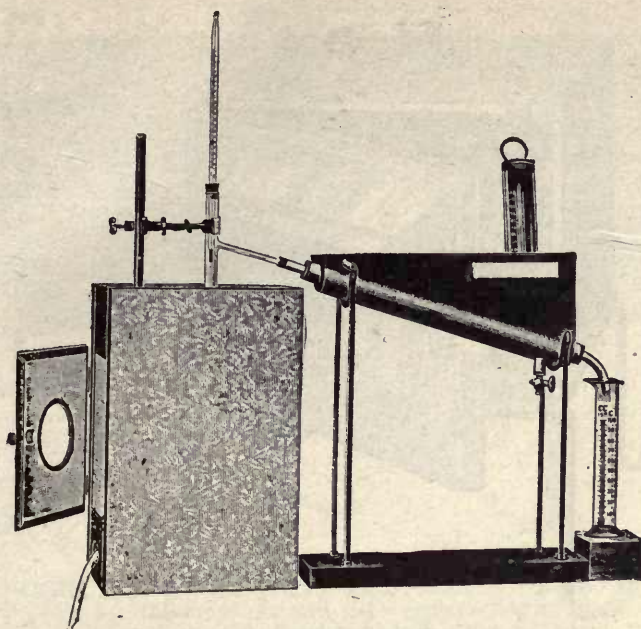
3563

3561 C. J. TAGLIABUE Improved Viscosimeter, with improved stop watch, and choice of two nipples, arranged for viscosity tests at 70°, 100° or 212° F. Unless otherwise ordered, the C. J. Tagliabue Viscosimeter will be equipped with 100° and 212° nipples.....\$102.00

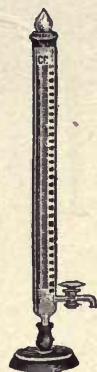
3563 SAYBOLT'S Viscosimeter, for testing cylinder, valve and similar oils with bath at 212° F., and the oil at 210° F.; for testing reduced black oils, with bath about and oil at 130° F.; for testing neutral, spindle, paraffine, red and other distilled oils, with bath about and oil at 100° F, or at any temperature from 70° to 212° F.

The Saybolt Viscosimeter is equipped with an electric heating device, a U-tube steam heater and a gas burner, in addition to a turntable stirring arrangement, which permits anyone to work easily and accurately up to the temperature of boiling water. The bath liquid prescribed is a paraffine, pale engine oil, of about 350° to 400° flash, to be used for viscosity tests at all temperatures. The electric heating medium for the oil bath is an immersion—Electric Element (110V.×5.5 Amperes=605 Watts) which is easily adjustable to the bath, for immersion or removal, and which is supplied with cord for attachment to any lamp socket, direct or alternating current. (220-volt can also be supplied to order.)

- With Stop-Watch..... 82.00
- Without Stop-Watch..... 75.00
- Turn-table arrangement only, with steam, gas and electric heating attachments for equipping old-style Saybolt Viscosimeters... 25.00
- In ordering Turn-table, please give us the number which appears on the inner oil tube of your Viscosimeter.
- 60 cc. Receiving Glass..... 2.50



3565



3565(g)

3565 DISTILLATION Apparatus, For testing, boiling and end point of gasoline, etc.

This apparatus has been designed and perfected along scientific lines, and admirably fills a long-felt need for a simple and efficient apparatus for the distillation and analysis of gasoline, blended gasolines, and paint thinners other than turpentine.

It has been adopted by the American Society for Testing Materials, also the Independent Oil Men's and Western Jobbers' Associations.

Complete with Bunsen burner.....\$45.00

Complete with Alcohol Lamp..... 55.00

3565(a) GRADUATED SETTLING TUBES, 16x1, graduated 0° to 100°..... 2.00

3565(b) PROOF GLASSES, 6 to 7-inch, with heavy bottoms..... .50

3565(c) PRECIPITATING TUBES, Graduated to 100 cc., with tapered bottom.. 3.00

3565(d) C. J. T. VISCOSIMETER GLASSES.

60 cc. Receiving Glass..... 2.50

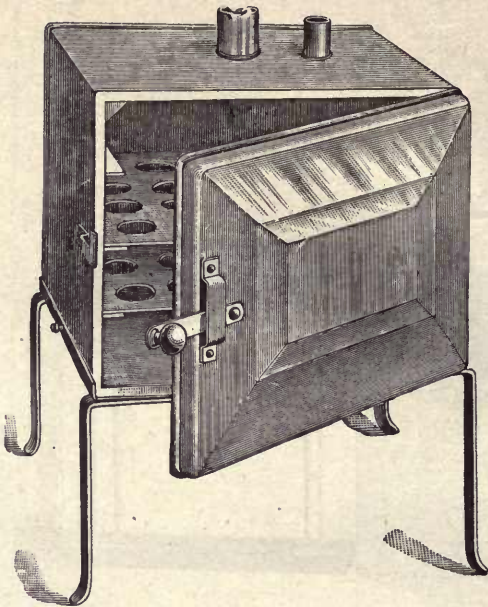
70 cc. Receiving Glass..... 2.50

80-90 cc. Measuring Glass..... 2.50

3565(e) PETROLEUM HYDROMETER SET, Consisting of four Hydrometers, divided as follows: 10° to 30°, 30° to 50°, 50° to 70°, 70° to 90°, in quarter degrees; one Standard Thermometer and one Hydrometer Jar, in fine leather-covered case, with lock..... 36.00

3565(f) PETROLEUM HYDROMETER SET, Consisting of eight Hydrometers, divided as follows: 10° to 21°, 19° to 31°, 29° to 41°, 39° to 51°, 49° to 61°, 59° to 71°, 69° to 81°, 79° to 91°, in tenth degrees; one Standard Thermometer and one Hydrometer Jar, in fine leather covered case, with lock..... 60.00

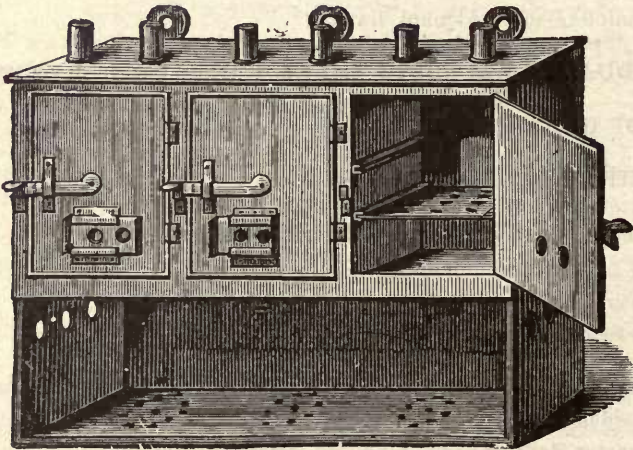
3565(g) OIL TUBE, Muter's, graduated 0-100 cc. in 1 cc..... 2.25



3566

3566 OVENS, Drying Ovens (single wall), made of polished copper, with tubulations for thermometer and gas regulator, extra sheet iron bottom, and supported on iron stand with set screw, by which the oven is held firmly. Made in three sizes, outside measurements as follows:

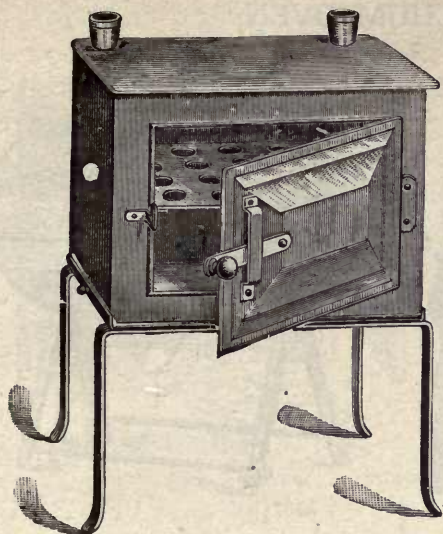
6 inch by 8 inch, with one removable shelf.....	\$ 5.00
8 inch by 10 inch, with one removable shelf.....	7.50
10 inches by 12 inches, with two removable shelves.....	10.50



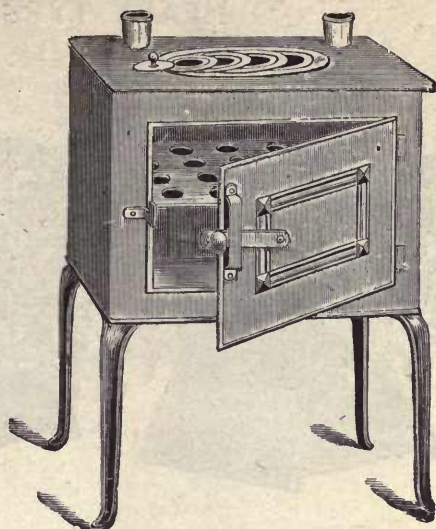
3568

3568 OVENS, Drying Oven, three compartments, of heavy polished copper, 21 inches long, 8¾ inches high, 7 inches deep, with three partitions, each 7 inches deep and 7 inches wide, with movable shelf, separate doors, ventilator and two tubulations for each; provided with sheet iron back and support for the burners, and is arranged to set on table or stand, or to hang against the wall.

Price	\$25.00
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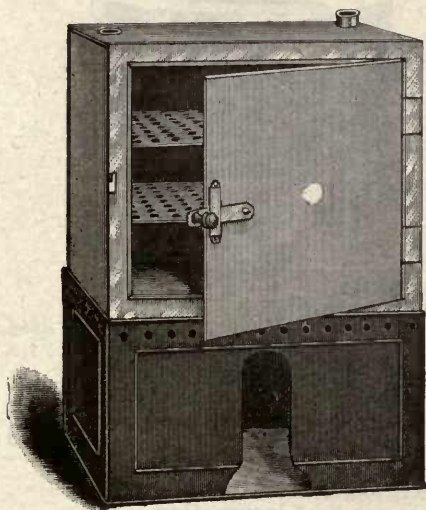


3570



3572

- 3570 OVENS, Drying Bath** (double wall), made of polished copper, with tabulations for thermometer and gas regulator, extra sheet iron bottom and supported on iron stand, with set screw by which the oven is held firmly. Made in three sizes. Outside measurements as follows:
- | | |
|---|---------|
| 6 inches by 8 inches, with one removable shelf..... | \$ 9.00 |
| 8 inches by 10 inches, with one removable shelf..... | 12.00 |
| 10 inches by 12 inches, with two removable shelves..... | 17.50 |
- 3572 OVENS, Drying Bath** (double wall), water bath top, otherwise like preceding. Made in three sizes. Outside measurements as follows:
- | | |
|---|-------|
| 6 inches by 8 inches, with one removable shelf..... | 12.00 |
| 8 inches by 10 inches, with one removable shelf..... | 15.00 |
| 10 inches by 12 inches, with two removable shelves..... | 20.00 |



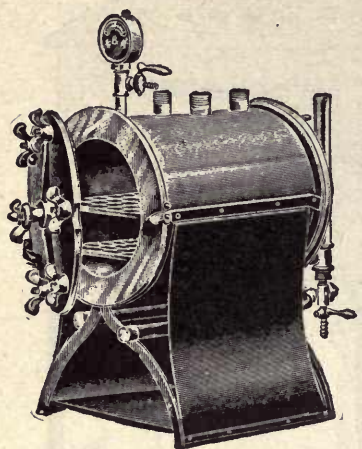
3574



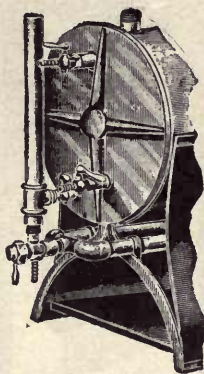
3581

- 3574 OVENS, Double Walled Drying Bath**, made of heavy polished copper with two perforated shelves, false bottom of sheet iron, a sheet iron base and asbestos mat, inside dimensions, 8 inches high, 10 inches wide, 9 inches deep. Iron base, 8 inches high.....
- | | |
|--|---------|
| | \$20.00 |
|--|---------|
- 3576 OVENS**, Inside dimensions, 10 inches high, 12 inches wide, 10 inches deep, Iron base, 8 inches high.....
- | | |
|--|-------|
| | 25.00 |
|--|-------|
- 3578 OVENS**, Same as No. 3574, with Water Bath top.....
- | | |
|--|-------|
| | 20.00 |
|--|-------|
- 3580 OVENS**, Same as No. 3576, with Water Bath top.....
- | | |
|--|-------|
| | 25.00 |
|--|-------|
- 3581 OVENS, Drying Bath**, made of heavy polished copper. Inside dimensions, 11 inches high, 10 inches wide and 8 inches deep, with openings for water, thermometer and Gas Regulator, with water-gage and three shelves. Mounted on strong support.....
- | | |
|--|-------|
| | 35.00 |
|--|-------|

HEAVY TYPE VACUUM OVEN



3581(a)



3581(b)

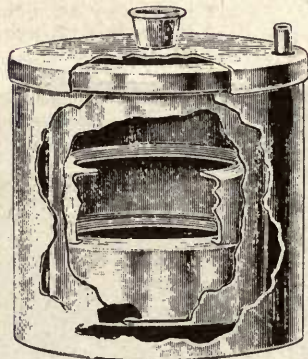
3581(a) OVENS, Heavy Type Vacuum; this oven is used by the Bureau of Chemistry of the U. S. Department of Agriculture, Sugar Laboratories and elsewhere, is made of heavy seamless brass tubes with 1" steam space. Door and front and rear ends heavy brass castings, and is mounted on a heavy strong stand of black iron.

Price, as shown.....\$175.00

3581(b) OVENS, Drying Oven, double wall, for drying in current of hydrogen, etc., substantially made of heavy copper and provided with one shelf; outside dimensions, 18 inches long by 10 inches diameter.....\$55.00



3582



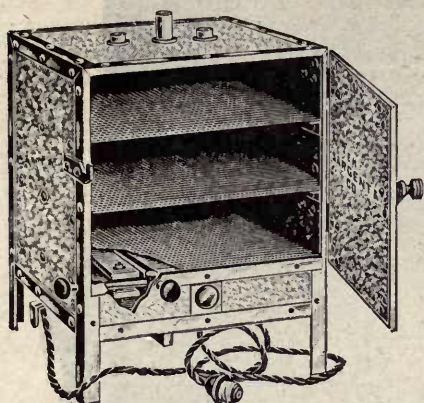
3582(b)

3582 OVENS, Drying Oven, Rammelsberg, made of polished copper, size 6 inches high by 5 inches diameter.....\$ 5.00

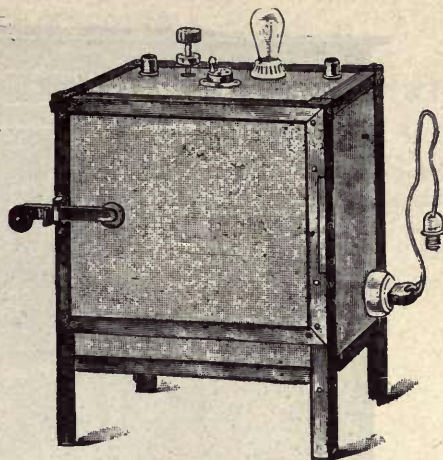
3582(a) OVENS, Drying Oven, Rammelsberg, made of polished copper; size 7 inches high by 6 inches diameter..... 6.00

3582(b) OVENS, Drying Oven, double wall, Rammelsburg, made of heavy seamless copper, for Hot Air, Water, Oil or Paraffine.
Inside dimensions, 6 inches diameter by 7 inches deep.
Outside dimensions, 8 inches diameter by 8 inches deep..... 20.00

As our Ovens are made in our shops, we are prepared to make them in any shape, size or design that may be desired. We use Heavy Copper for all Ovens coming in contact with water or the moisture from steam, when steam heated. All Sheet Metal Ovens other than those which must be of Copper are made of American Ingot Iron. This material lasts much better than the Russian Iron or plain steel which pits. For the outer coverings we use the Hard finished asbestos product, Transite, which is the best known insulator.



3582(c)



3583

3582(c) OVEN, Sargent's Electric, patented Jan. 6th, 1914; electrically heated and automatically controlled, it may be set for any desired temperature between 50°C and 160°C , and is accurate to within 1°C . The chamber of the oven is 10 inches high, 12 inches wide and 10 inches deep. The oven is made of an asbestos compound and bound with metal and may be connected to the usual lamp socket by a plug and cord. The units are of the replaceable type and in case of accident may be renewed in a few moments without the use of tools. The working chamber has three shelves, of which the two upper are of approximately the same temperature and are usable for constant temperature work, such as coal analysis, while the bottom shelf being close to the heating units, may be used for rapid evaporations where the temperature is of no consequence, as in inorganic work.

Arranged for 110 or 220 volts, direct or alternating current.

Price, complete with thermometer, six foot cord and plug and directions for operating.....\$27.50

Extra heating units, each..... 1.00

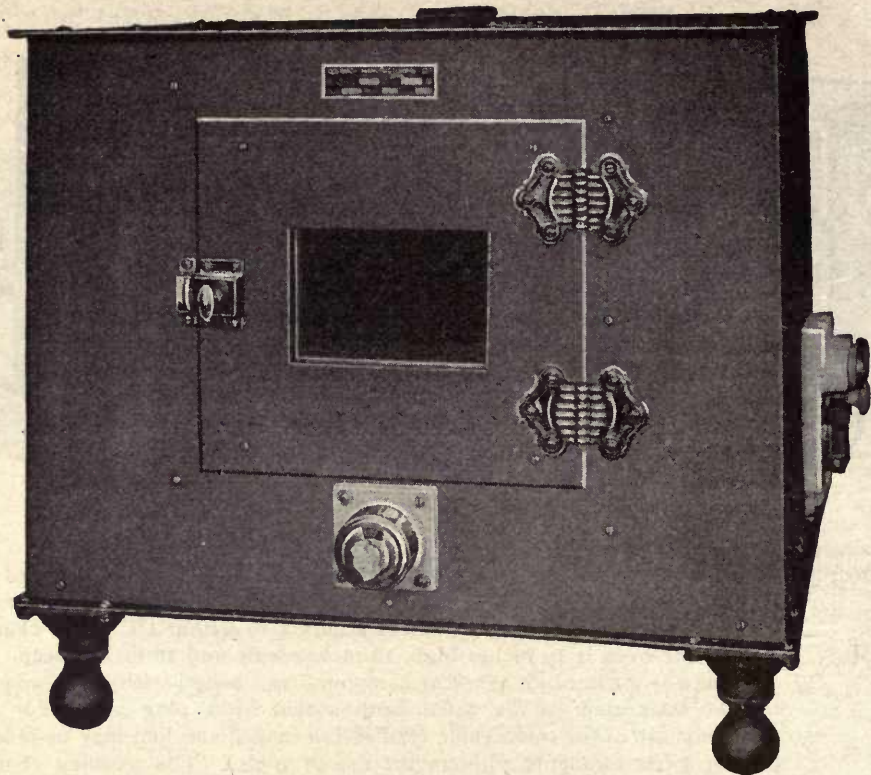
Resistance wire on spools, sufficient for rewinding many heating units. Per spool..... 1.50

In ordering, please state voltage desired.

3583 OVEN, Celeritas, Electric; constructed of Asbestos Board, and with heavy brass binding, finished in keeping with our regular standard apparatus. The regulation is positive and the control within one degree. The range at which the Oven can be used is from 50 degrees to 200 degrees Celsius. Consumption is 5 amperes. Can be used with ordinary socket on either alternating or direct current. A feature is that the contact points are outside the Oven. This eliminates any possible danger when using a combustible substance.

Heating units are independent and can be renewed, but this will hardly be necessary so long as ordinary care is taken of the Oven. Electrical heat does not require draft. In fact, these changes are detrimental to all heating units. Proper ventilation at the top is all that is necessary.

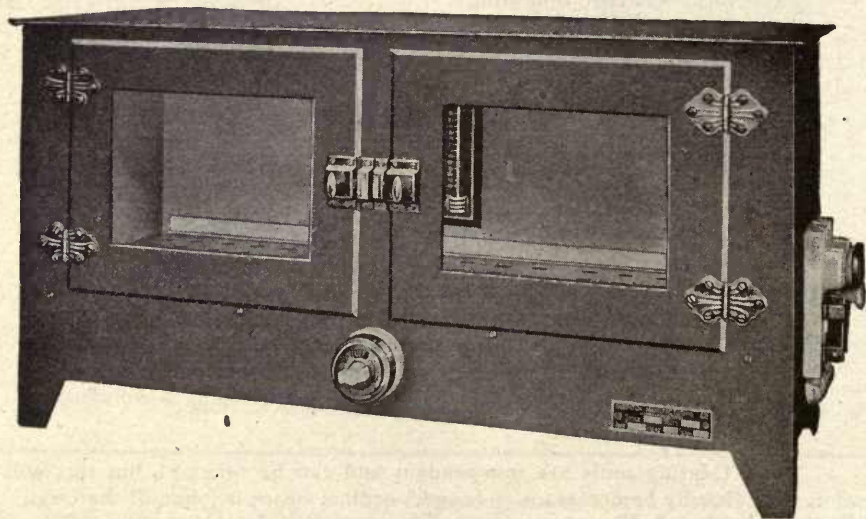
For 110 volts, either Direct or Alternating Current, size, 10x10x12 inches wide, with 6 feet cord and plug.....\$40.00
Can also be furnished for 220 Volts.



3583-1

Despatch Electric Oven No. 90

For successful test baking. Proven as necessary to the small capacity miller as to the large. The demand for an oven and proofing cabinet to meet these requirements has led us to design and to now offer to the trade the oven and cabinet shown in the cuts.



3583-2

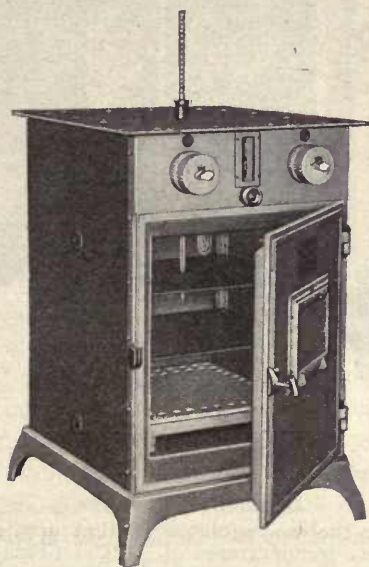
Despatch Electric Proofing Cabinet No. 510

Price for Oven and Cabinet, 110 volts.....	\$80.00
Price for Oven and Cabinet, 220 volts.....	87.00
Price for Oven only.....	62.50
Price for Cabinet only.....	27.50

FREAS' ELECTRIC OVEN

With Accurate Temperature Control. Patented in the United States and European countries. Approved by the National Board of Fire Underwriters.

The FREAS' ELECTRIC OVEN has become widely and favorably known throughout the world as the most accurate, reliable and durable electric oven for constant temperature purposes. The oven after once set for the temperature desired is always ready for use, and can be depended upon for continuous unattended operation. It is easily adjusted for the desired temperature by simply turning a milled head screw.



3583-3

3583-3

FREAS' ELECTRIC OVENS.

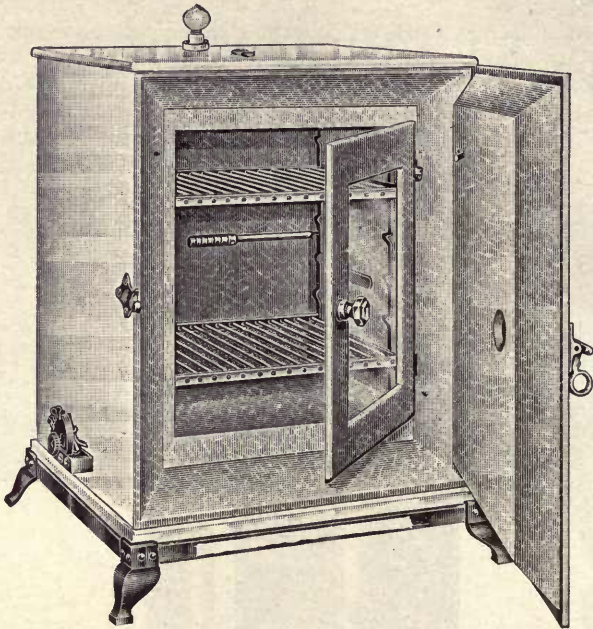
PRICE LIST

When ordering do not fail to specify voltage of current. Type R—for temperatures up to 180°C.

Size No.	Diam. of Chamber	Mounted on Cast Iron base to stand on table	Price, net
100	12x12x12	Heavy base with legs.	\$110.00
108	16x14x16		190.00
110	14x17x18		215.00
136	26x14x22		279.00
140	32x18x24		315.00

Each Oven is furnished with flexible cord and plug to fit socket of ordinary lighting circuit.

DEKHOTINSKY TRIPLE WALLED DRYING OVENS
ELECTRICALLY HEATED AND REGULATED
Patented



3583-4

3583-4 OVEN, drying, triple walled DeKhotinsky.

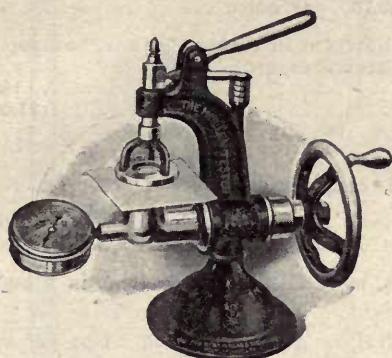
Distinctive Features.

- 1. A new bimetallic thermo-regulator (patent applied for), which is actuated by a difference in temperature of 1°C . (This does not mean control of temperature throughout the oven chamber to $1/4^{\circ}\text{C}$., but within the space adjacent to the regulator.) Charts made with a recording thermometer actually show less than a degree of variation through periods of 24 hours.
- 2. Location of the heating elements in the base of the oven beneath the false bottom—instead of in the oven chamber—where they are shielded by an iron deflector, preventing radiant heat from striking the lower shelf.
- 3. An air circulating system which reduces the difference in temperature between the top and bottom shelves to less than a degree C. instead of 12 to 20 degrees, as usually found.
- 4. The DeKhotinsky standard system of heating, by which extra heating units may be thrown into or out of the circuit to obtain any desired temperature up to the maximum.
- 5. Replaceability of heating units by the user from outside the oven in case of burn-out, at a nominal cost, without the necessity of interrupting the drying process or sending to the factory for repairs.
- 6. Location of the contact points of the make-and-break outside the oven and their enclosure in a tight case, preventing any possibility of the explosion of inflammable gases generated within the oven.
- 7. Ease of adjustment of temperature, by means of the thermo-regulator, from room temperature to the maximum temperature of the oven. This is accomplished by turning a removable key outside the oven, actuating a worm gear which sets the contact points to open or close at the desired temperature.

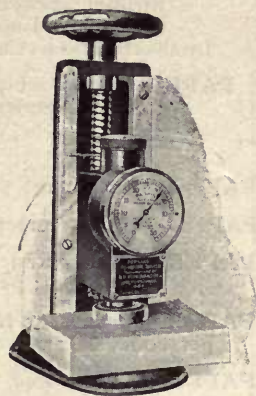
OVENS, drying, triple wall, DeKhotinsky electrically heated and regulated, with five feet of flexible asbestos covered board.

	A	B	C
Height, inside, inches.....	10 $\frac{3}{8}$	14 $\frac{3}{4}$	19 $\frac{3}{4}$
Width inside, inches.....	7	12	17
Depth inside, inches.....	6 $\frac{1}{2}$	11 $\frac{3}{4}$	14
Shelf space, sq. inches.....	91	282	476
Price for 110 volts.....	\$55.00	90 00	145.00
Price for 220 volts.....	57.50	92.50	147.50
If for A. C., state cycles and phase.			

PAPER TESTING APPARATUS



3585



3586

- 3585 PAPER TESTER, Mullen type**, for testing the strength of paper, fiber-board and textiles. This instrument accurately and automatically registers the strength of paper in pounds to the square inch. The paper is clamped over one end of the cylinder which is filled with liquid. The liquid in this cylinder is compressed by means of turning a handwheel and the fluid is forced up against the paper. This fluid pressure is increased until the paper is burst. At the breaking point the gauge pointer remains stationary, so the results can be read closely. Pressing on a button releases the pointer. Besides its use on all kinds of paper, fiber-board and so forth, the tester is used on such materials as leather, celluloid, textile goods, etc. The regular size tester is fitted with a gauge to register up to 160 pounds per square inch, although it is advisable to use lower reading gauges for such materials as tissue or newspaper and a higher reading instrument for boxboards and textile goods of all sorts.
- Paper Tester, Mullen type.....\$100.00

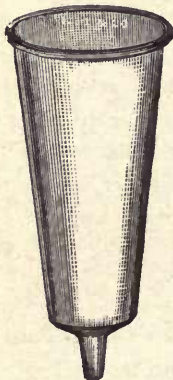
- 3586 PRESSURE BULKER, Perkins' type.** This instrument fills a very definite need by providing a positive uniform standard for measuring the bulk of paper. A pile of sheets is placed between the contact faces and the handwheel clamp is screwed down until the desired pressure is indicated on the dial. The thickness can be read directly from the vertical scale at the left. The pressure is indicated in pounds per square inch and the thickness in inches and fractions of an inch. The present and faulty method is to caliper one sheet and multiply by the number of sheets in a pile or package. This plan affords numerous errors, as the thickness of the paper varies so much that it is impossible to obtain a representative sheet.
- Pressure Bulker, Perkins' type.....On application

We have the facilities for furnishing the latest types of paper and other testing machines and do not purposely list at this time such instruments which are imported and which are unobtainable at this period. However, upon the return of normal conditions, we can furnish any of the imported high grade testing machines.

PANS—Gold, see page 188.

PAPER, Adam's, for absorbing milk.

- 3587 PAPER, Drop Reaction Paper, Whatman, for quickly absorbing a drop of liquid without spreading, better adapted and more accurate for drop tests than the old method of using porcelain plate.
In sheets 22x14 ctm (per sheet, \$0.10), per quire.....\$1.25
- 3588 PAPER, Glazed, white, black or yellow, cut in sheets 10x12 inches, for mixing assay samples, collecting filter ashes, etc.
Sheets 100 1000
Price\$1.00 6.00
- 3590 PAPER, Parchment, pound.....\$0.75
- 3592 PAPER, Litmus, tumeric, congo red, etc., per quire..... .80
- 3592(a) PAPER, Litmus, Red or Blue, in small books, 25 strips in a book (per book, 5c); per dozen books..... .50
- 3592(b) PAPER, Tumeric or Neutral Litmus, in small books, 25 strips in a book, per book, 6c); per dozen books..... .60
- 3593 PAPER, Litmus, Red, Blue or Neutral, in glass vials, 100 strips per vial
Each10
- 3593(a) PAPER, Litmus, Red or Blue, in tape form, perforated strips; in small tin box. One box sufficient for 100 tests. Per box..... .15
- 3594 PENCILS, Blue, red or yellow, for writing on glass, porcelain, etc.
Each20
Per dozen..... 2.00
- 3595 PENCILS, Carbon, for cutting glass, each..... .10



3598



3288



3600

3598 PERCOLATORS, Conical Glass.

Capacity, pts.....	1/2	1	2	4	1 gal.	2 gal.	3 gal.	5 gal.
Each	\$0.60	.75	.90	1.00	1.50	3.00	4.75	8.00

3288 PERCOLATOR JARS, graduated in ounces.

Capacity, quarts.....	1	2	4	8
Each	\$2.00	2.50	3.50	5.00

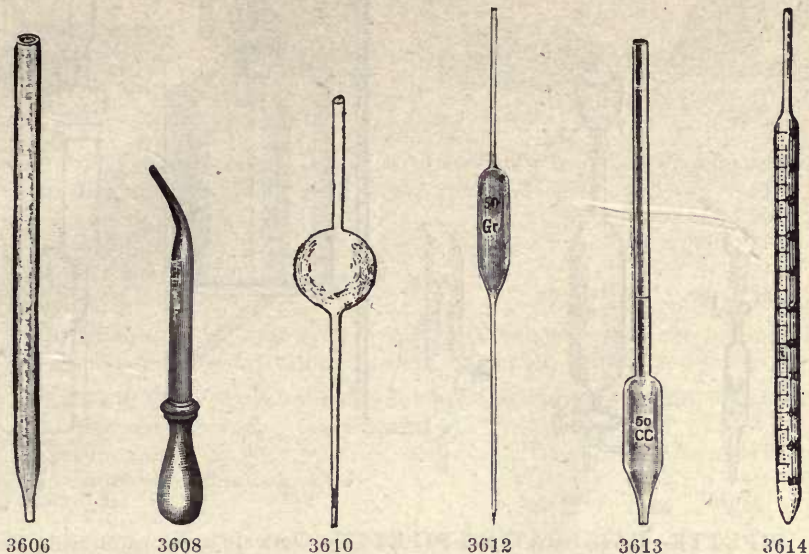
3288a PERCOLATOR JARS, graduated in metric system.

Capacity, liters.....	1	2	4	8
Mark every, cc.....	100	100	200	500
Each	\$2.00	2.50	3.50	5.00

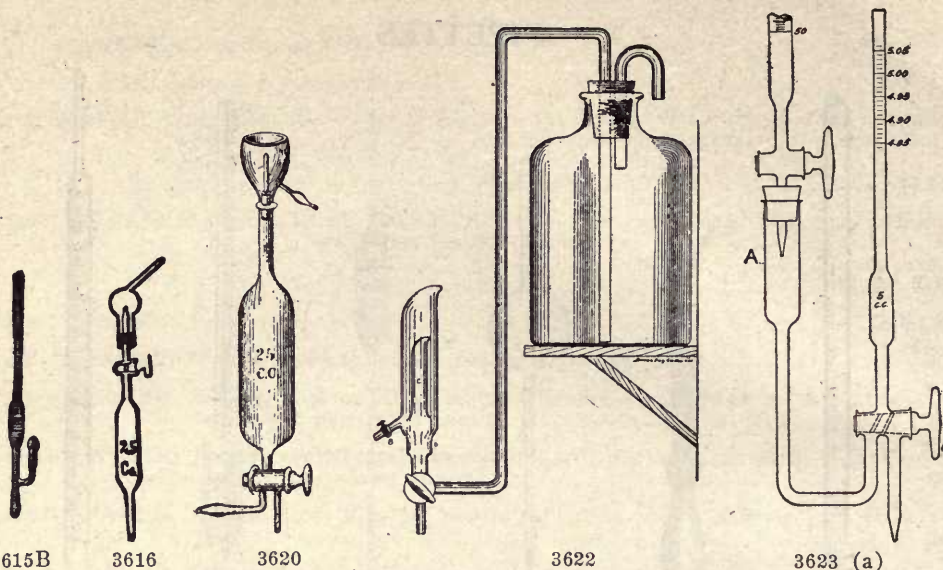
3600 PERCOLATOR, Oldberg's, Cylindrical.

Capacity, pts.....	1/2	1	1 1/2	2 1/2	4
Each	\$0.60	.75	.90	1.00	1.25
Capacity, gal.....	1/2	3/4	1	2	
Each	\$1.50	1.75	2.50	4.00	

PIPETTES



- 3606** PIPETTES, straight, drawn to a point, not fixed.
 Length, inches 5 6 7 8 10 12 15 20
 Each\$0.04 .05 .05 .06 .07 .08 .10 .12
- 3608** PIPETTES, small, Medicine Droppers, with rubber bulb end, either bent or straight; per doz.....\$0.40
- 3610** PIPETTES, with Bulb, not fixed.
 Capacity, c.c..... 5 10 25 50 100
 Each\$0.10 .15 .20 .25 .30
- 3612** PIPETTES, Volumetric, graduated most accurately.
 Capacity, c.c 1 2 3 5 8 10 12 15 20
 Each\$0.12 .12 .15 .16 .22 .25 .28 .30 .35
 Capacity, c.c. 25 30 50 75 80 100 200
 Each\$0.36 .45 .48 .60 .65 .75 1.00
- 3613** PIPETTES, Volumetric, short form, graduated most accurately.
 Capacity, c.c. 1 2 5 10 20 25 50
 Each\$0.12 .12 .20 .25 .30 .35 .45
- 3614** PIPETTES, Mohr's, accurately graduated.
 Capacity, c.c. 1 1 1 1 2 2 2
 Graduated to c.c.....1/100 1/50 1/10 1/5 1/50 1/20 1/10
 Each\$0.50 .40 .35 .30 .40 .45 .45
 Capacity, c.c. 5 5 10 20 25 50 50
 Graduated to c.c..... 1/20 1/10 1/10 1/10 1/10 1/10 1/5
 Each\$0.55 .50 .65 .85 .95 1.50 1.35
- 3615** PIPETTES, Mohr's, so-called intake pipettes, graduated from the delivery tip.
 Capacity, c.c. 1/10 1 1 2 5 10
 Graduated to c.c.....1/100 1/100 1/10 1/10 1/10 1/10
 Each\$0.50 .50 .40 .50 .60 .75
- 3615(a)** PIPETTES—Bacteriological, especially designed for ease of sterilization and uniform handling, all of a given size are of the same length and have straight sides. The last graduation mark toward the mouthpiece end is in all sizes, $3\frac{1}{2}$ inches away.
 Capacity, c.c..... 1 1 1 5 5 10 10
 Graduation, c.c....1/100 1/10 1 mark 1/10 1 mark 1/10 1 mark
 Length, inches.... 12 12 12 12 12 14 14
 Price\$0.50 .35 .12 .50 .20 .50 .20



3615B

3616

3620

3622

3623 (a)

- 3615B PIPETTE—CALIBRATING PIPETTE—Ostwald's**, for calibrating Burettes, capacity 2 cc., with two marks. Each.....\$ 1.25
- 3616 PIPETTES**, Volumetric, with stopcock and safety reservoir to receive surplus of liquids.
Capacity, c.c 2 5 10 25 50 100
Each\$2.50 2.75 3.00 3.25 3.50 4.50
- 3620 PIPETTE—Overflow, Automatic**, with patent three-way stopcock and reservoir for collecting the excess.
Capacity, c.c 10 15 25 50 100
Each\$3.00 3.00 3.50 3.75 4.52
- 3622 PIPETTE—Overflow, Julian's**, for equal successive portions of liquids.
Capacity, 15 c.c., unless otherwise ordered, without bottle.....\$12.50
- 3623(a) PIPETTE—CALIBRATING**, as designed by Prof. C. W. Foulk of the Ohio State University. The use of the stopcock as the lower mark eliminates one-half of the readings that would otherwise be necessary and increase the accuracy of the instrument. Full directions for use will be sent with the pipette. Each..... 7.50

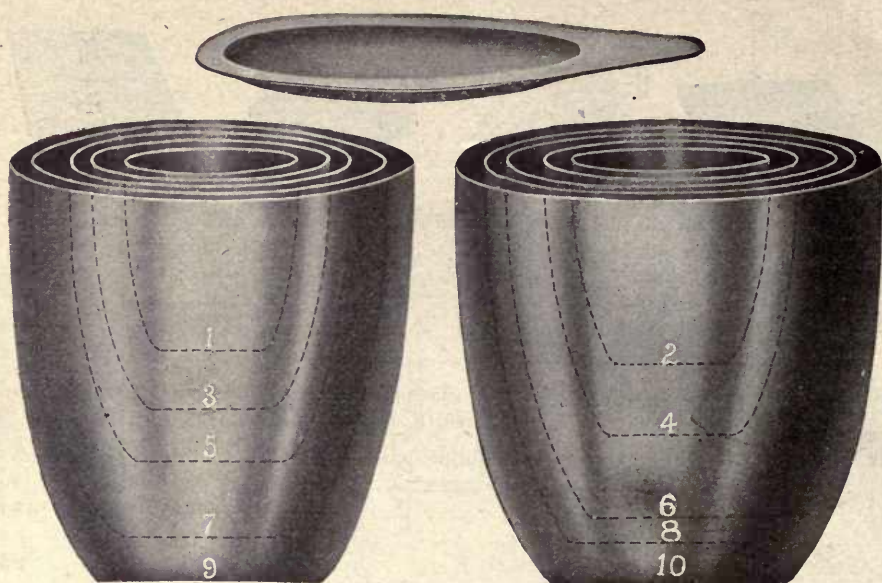


3623(b)



3623(d)

- 3623(b) PIPETTE Box**, of sheet copper, with overhanging cover, for sterilizing pipettes; size 4x4x12 inches.....\$ 2.50
- 3623(c) PIPETTE Box**, same as above, but made of sheet iron..... 1.75
- 3623(d) PIPETTE Box**, of sheet copper, size 2 inches by 15 inches..... 2.00
- 3623(e) PIPETTE Box**, of sheet iron, size 2 inches by 15 inches..... 1.50
- 3624 PLATES**, Blue glass, Cobalt glass.
Size 2x2 3x3
Each\$0.10 15
- 3626 PLATES**, Glass, Heavy Plate, rough on one side.
Size, square inch..... 4 5 6 7 8 9 10 12
Each\$0.25 .30 .35 .40 .50 .65 .90 1.00



3639(a)

3639(a) PLATINUM Crucibles. Standard weights and sizes kept in stock. Platinum Crucibles, with covers, weigh approximately as many grammes as their capacity in cubic centimeters. Covers are always furnished with Crucibles unless otherwise ordered. Other weights, shapes and capacities made to order. Gold, silver and gold lined Platinum Crucibles made to order.

No.	Approximate		No.	Approximate	
	Capacity cc.	weight, grammes		Capacity cc.	weight, grammes
1	8	8	6	30	30
2	10	10	8	50	50
3	15	15	9	60	60
4	20	20	10	70	70
5	25	25			



3639(b)



3639(c)

3639(b) Platinum Crucibles, Gooch Form.

Capacity cc.	Weight with Cover and Cap, grammes
10	13
15	18
20	24
25	29
30	34

3639(c) Platinum Gooch Crucible, low form,
capacity 30 cc. Approximate
weight, 30 grammes.

At prevailing Market Price,



3639D



3640



3640(a)



3641



3642

3640 PLATINUM ANODE.

3640(a) PLATINUM ANODE

3641 PLATINUM CATHODE, Open Cylinder.

3642 PLATINUM CATHODE.

3639D PLATINUM CRUCIBLE, J. Lawrence Smith Form, for Alkali determination. Weight, including cover, grammes, 35.....\$00.00

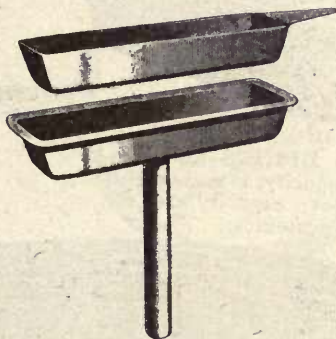


3643b

3643(b) PLATINUM COMBUSTION BOATS.

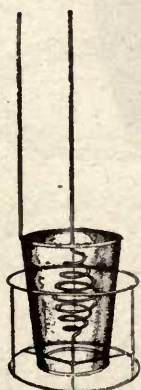
Size:

Length	Approximate Weight
1½ in.	3 Grammes
2 in.	3.8 Grammes
3 in.	7 Grammes
4 in.	12 Grammes



3644

3644 PLATINUM BOAT AND HOLDER, Blair's Form. Approximate weight of Boat and Holder 30 gr.



3645



3645(a)



3645(b)



3645(c)

3645 PLATINUM ANODES. Gauze Cathode. Wire Frame Anode.

3645(a) PLATINUM ANODES. Open Gauze. Cylinder.

3645(b) PLATINUM ANODES. Closed Gauze. Cylinder.

3645(c) PLATINUM ANODES. Rotating Gauze.

At Prevailing Market Price



3645(d) **PLATINUM DISH FOR MILK ANALYSIS.** Capacity, 45 cc. Approximate weight, 17 grammes.



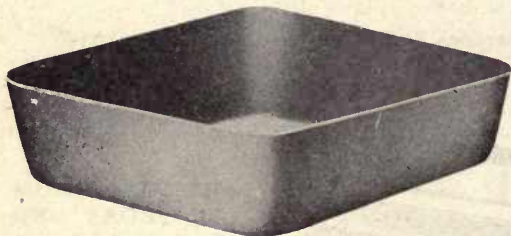
3645(e) **PLATINUM DISH FOR SUGAR ANALYSIS.** Capacity, 35 cc. Approximate weight, 16 grammes.



3645(f) **PLATINUM DISH FOR IRON, STEEL AND WATER ANALYSIS.** Capacity, 45 cc. Approximate weight, 16 grammes.



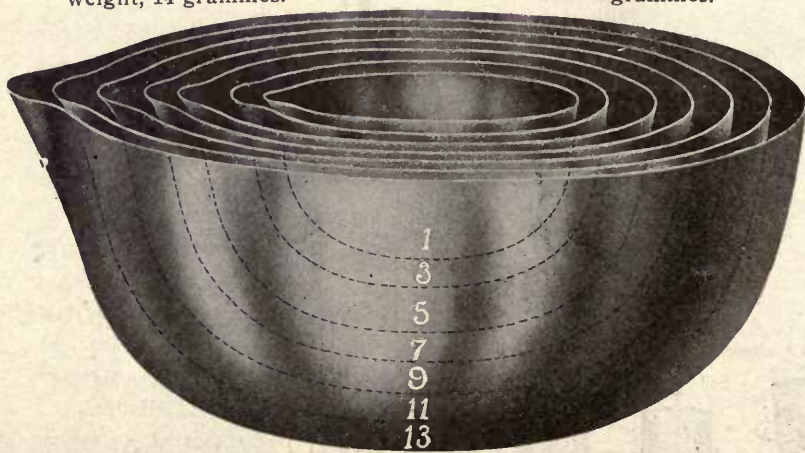
3645(g) **PLATINUM INCINERATING PAN FOR SUGAR ANALYSIS,** with or without lip or handle.
Capacity, cc..... 10 20 25 35
Weight, grammes..... 10 14 18 20



3645(j) **PLATINUM DISHES** for fertilizer analysis, Payne's form, having a flat bottom and wire rimmed top. Capacity, 100 cc. Weight, about 40 grammes.

3645(h) **PLATINUM DISHES** for incineration. Capacity, 15 cc., weight, 10 grammes; capacity, 20 cc., weight, 14 grammes.

3645(k) **PLATINUM DISHES** for electrolytic work. Classen form. Made either with polished or sand-blasted inner surface. Capacity, 250 cc. Weight, about 40 grammes.

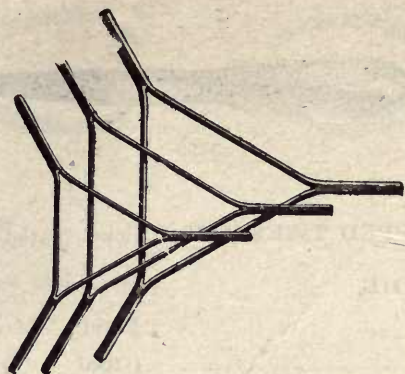


3645(m)

3645(m) **PLATINUM DISHES** with or without lip. Standard weights and sizes kept in stock.

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Cap., cc.....	15	20	25	35	50	65	75	100	125	150	175	200	250	300
Ap. wt., gm. 5		6	8	12	17	22	25	33	42	50	55	67	80	100

At Prevailing Market Price



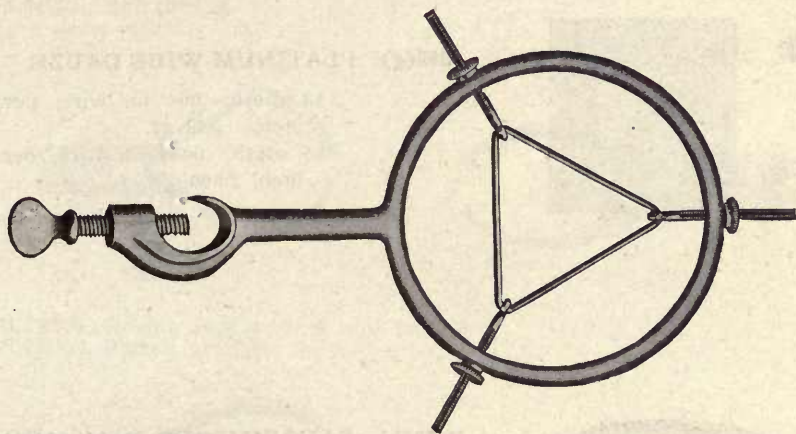
3646

3646 PLATINUM—Triangles, with flat solid ends.

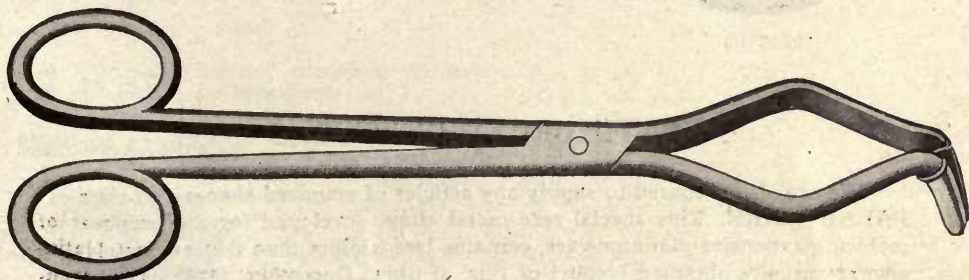
For Crucible, cc.....	10	15	20	25	30	40	50	60	70
Weight, about grammes.....	5.0	7.0	10.5	12.0	12.0	14.0	16.0	18.0	20.0

3649 PLATINUM WIRE. Sizes according to Brown & Sharpe gauge.

No.	12	14	16	18	20	22	24
Size, decimal of in.....	.0808	.0641	.0508	.0403	.0320	.0253	.0201
Weight, per ft., grammes...	1.8	1.1	.7	.45	.28	.17	.12
No.	26	27	30	34	35	36	
Size, decimal of in.....	.0159	.0142	.0100	.0063	.0056	.0050	
Weight, per ft., grammes.....	.85	.65	.33	.132	.101	.08	



3650

3650 PLATINUM, Triangles and Holder, prices upon application.

3651

3651 PLATINUM TIPPED CRUCIBLE TONGS, Nickel and Nickel Plated. With hollow or solid platinum tips. These tongs also furnished with nichrome palan or platinum tips.

At Prevailing Market Price



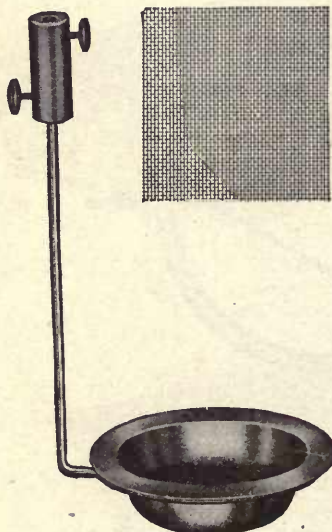
3653

3653 PLATINUM TIPPED TWEEZERS. Nickel plated.

3653(c) PLATINUM FOIL.

Size	Light	Medium	Heavy
Thickness	1-1000	1-500	1-250 in.
Weight, per square inch.....	0.353	0.705	1.411 grammes

3653(d) PLATINUM SPATULAS. Standard size spatulas weight approximately as many grammes as their length in centimeters.



3653(h)

3653(g) PLATINUM WIRE GAUZE.

52 mesh, .004 in. wire, per square inch, .550 gr.
45 mesh, .0085 in. wire, per square inch, 1.500 gr.

3653(h) CALORIMETER PAN AND HOLDER. Pan, 5.0 gr. Holder, 6.0 gr.

At prevailing market price.

PLATINUM SUBSTITUTES

We are also prepared to supply any articles of standard shapes and sizes of **PALAU WARE**. This special rare metal alloy, developed for the purpose of replacing expensive platinumware, contains less iridium than the regular platinumware usually obtained (report of Bur. of Stds., December, 1916), is guaranteed to withstand continuously 1,300°C., and has been used by prominent chemists in daily laboratory routine and in varied lines of work, both metallurgical and industrial.

BARIO crucibles can also be furnished by us. They are guaranteed absolutely resistant to both acid and alkali, and for such ordinary laboratory utensils are equal to platinumware and cost but a small fraction as much.



3654



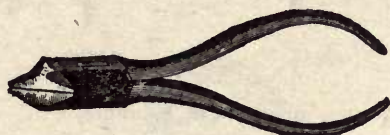
3656

3654 PLIERS, Flat Nose.

Size, inches.....	4	5	6
Each	\$0.75	1.00	1.25

3656 PLIERS, Flat Nose, side cutting.

Size, inches.....	4	5	6
Each	\$1.00	1.25	1.50



3658



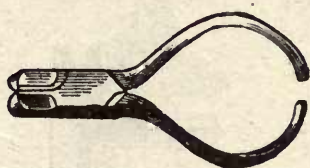
3660

3658 PLIERS, Side cutting.

Size, inches.....	4	5	6
Each	\$1.00	1.25	1.50

3660 PLIERS, End cutting.

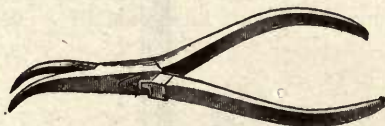
Size, inches.....	4	5	6
Each	\$1.00	1.25	1.50



3662



3664

3662 PLIERS, Cutting edge parallel, with handle.....\$1.50**3664 PLIERS, Button, straight, for lifting cupel beads.....1.00**

3666



3668

3666 PLIERS, Button, turned-down nose.....1.00**3668 PLIERS, for gaswork.....1.25**

3669

POLARISCOPES—Due to the great demands made by the government on all manufacturers of optical instruments, we do not deem it proper at this time to list any such instruments. However, when conditions have returned to normal we shall issue our customary supplement on polariscopes, spectroscopes and so forth.

3669 PRESSES—For tincture from herbs, meats, etc.

Capacity, qts.....	1	2	4	8
Each	\$6.00	7.50	10.00	15.00

PUMPS



3683



3684

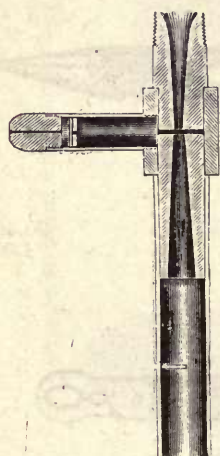


3686



3688

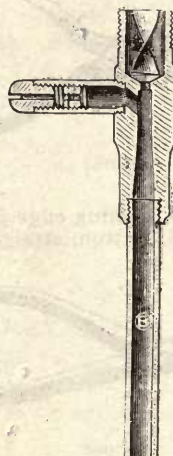
- 3683 PUMP—Piccard, will evacuate 1 l. to 20 mm. pressure in 1 minute.....\$2.75
- 3684 PUMP—Geissler, with valve, mounted..... 4.00
- 3684(a) PUMP—The glass parts only..... 2.50
- 3686 PUMP—Muencke's, of glass..... 2.00
- 3688 PUMP—Muencke's, of glass, with 2 suction tubes..... 2.00



3689



3690



3691

- 3689 PUMP—Filter Pump, Chapman's, small, size $3\frac{3}{4}$ inches, $\frac{1}{8}$ -inch I. P. size.....\$1.75
 Chapman's, medium, size $4\frac{3}{4}$ inches, $\frac{1}{4}$ -inch I. P. size..... 3.25
 Chapman's, large, size $5\frac{3}{8}$ inches, $\frac{1}{4}$ -inch I. P. size..... 5.00
- 3690 PUMP—Filter Pump, Richard's, small, size 7 inches, $\frac{1}{8}$ -inch I. P. size
 thread 1.50
 Richard's, large, size 7 inches, $\frac{3}{8}$ -inch I. P. size thread..... 3.00
 Richard's, extra large, size 13 inches, $\frac{3}{4}$ -inch I. P. size..... 7.50
- 3691 PUMP—Celeritas Filter Pumps, or Aspirators, are constructed on an entirely new idea and will produce a higher vacuum in less time and using one-third less water than any other pump made.
 Small size, $3\frac{3}{4}$ inches long, $\frac{1}{8}$ -inch I. P. size thread..... 2.25
 Medium size, $4\frac{3}{4}$ inches long, $\frac{1}{4}$ -inch I. P. size thread..... 3.75
 Large size, $5\frac{3}{8}$ inches long, $\frac{3}{8}$ -inch I. P. size thread..... 5.50



3691(a)

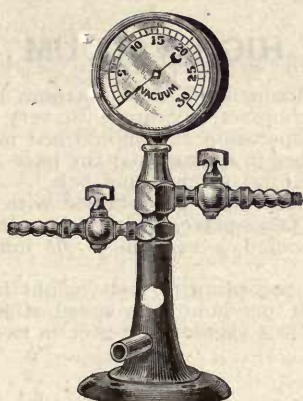


3691(b)

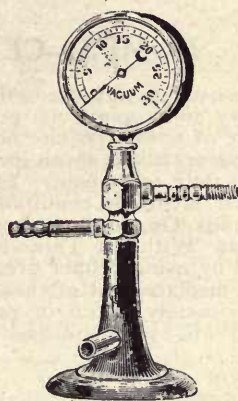


3691(c)

- 3691(a) **CONNECTIONS**, of brass, with hydrant thread for filter pumps, in three sizes to fit the various filter pumps— $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ -inch I. P. thread.....\$ 0.50
- 3691(b) **ROYLE CONNECTIONS** for filter pumps to connect to smooth faucet. Cannot leak or be forced off; in three sizes to fit the various filter pumps— $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ -inch I. P. thread..... .75
- 3691(c) **CONNECTION**, of brass, with hydrant thread, for extra large Filter Pump No. 3690. Richard's extra large..... 1.00

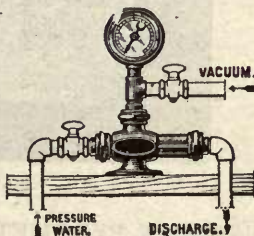
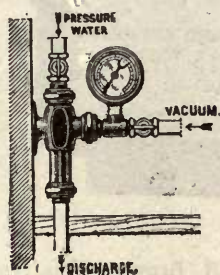


3692



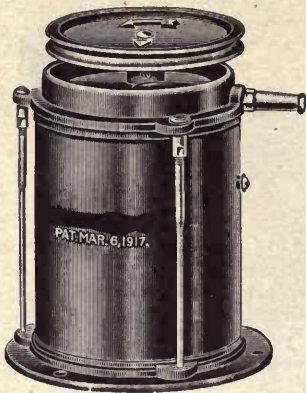
3693

- 3692 **PUMPS**—Filter on base, with vacuum gauge and with stopcocks at water and air connections.....\$ 8.75
- 3693 **PUMPS**—Filter Pump, of brass, with vacuum gauge, without stopcocks at water and exhaust connections. Each..... 10.00
- 3695 **PUMPS**—As above, without gauge..... 6.50
- 3697 **PUMPS**—As above, without stopcocks (with gauge)..... 8.00
- 3699 **PUMPS**—As above, without stopcocks or gauge..... 4.50

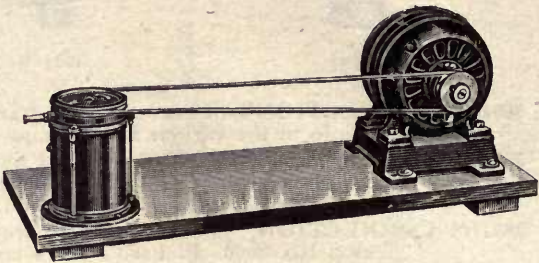


3701

- 3701 **PUMPS**—Laboratory Water Jet Vacuum Pump. For the rapid creation and maintenance of a vacuum for filtration, etc. Complete, as shown in illustration, including exhauster, vacuum gauge, connecting tee and two cocks.....\$17.50
- 3701(a) **PUMPS**—Laboratory Steam Jet Vacuum Pump. Same as above, but constructed for operation by steam. Complete, as illustrated, including exhauster, vacuum gauge, connecting tee, stock and check valve..... 17.50



3703



3703
Mounted with Motor

PUMPS—CENCO-NELSON HIGH VACUUM

These pumps represent the most recent development in High Vacuum Pumps for laboratory and commercial purposes. They are compact, operate with very small expenditure of power, require no attention when in operation and should last indefinitely. They measure about seven inches high by five inches in diameter at the base and weigh approximately ten pounds. The pulley is grooved for ¼-inch round belt.

Under favorable conditions, a vacuum of 0.1 mm. may be obtained with the Two-stage Pump. On continuous service, some heating takes place, which lowers the vacuum somewhat. With the Three-stage Pump, water cooled, a vacuum of .05 mm. may be obtained by using proper precautions.

The displacement of these pumps in free air, according to tests in our laboratory, is approximately 285 cu. in. per minute, or 10 cu. ft. per hour, at a speed of 900 r. p. m.

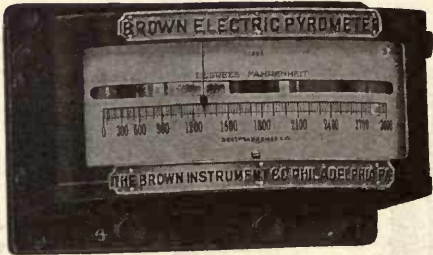
They will evacuate a flask of one liter capacity to a vacuum of 1 mm. in two minutes.

No.	A	B
Number of stages.....	2	3
Vacuum, mm.....	0.1	0.05

A PUMPS—Nelson, unmounted.....	\$25.00	\$35.00
B PUMPS—Nelson, on hardwood base, without motor.....	30.00	40.00
C PUMPS—Nelson, on hardwood base, with 110-volt A. C. Motor....	60.00	70.00
D PUMPS—Nelson, on hardwood base, with 110-volt D. C. Motor....	60.00	70.00

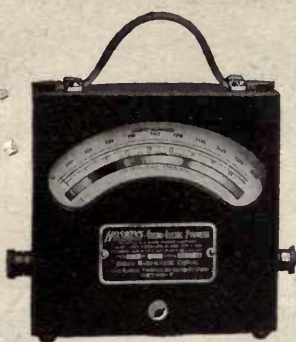
Pumps—See also Blowers.

PYROMETERS

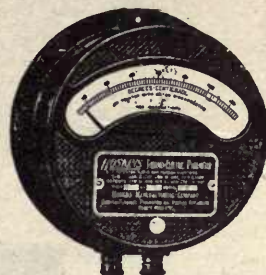


3705

3705	HIGH RESISTANCE PYROMETER, Brown. This type of Pyrometer is entirely unaffected by changes in the length of wire connecting the thermo-couple to the instrument, and is a superior type of instrument where the greatest accuracy is required. It should always be used with platinum thermo-couples, and is desirable for use with base-metal thermo-couples also.....	\$60.00
3705(a)	PLATINUM RHODIUM THERMO-COUPLES in porcelain tubes, with heads and binding posts.	
	18 inches.....	37.50
	27 inches.....	48.00
	36 inches.....	60.00



3707



3707(a)

- 3707 PORTABLE PYROMETER, Hoskins.** Type P. A., for temperatures from 200° to 2500° F. (100°-1370° C.). A practical laboratory and shop instrument of special value in connection with furnace operations, as it enables definite knowledge of chamber temperatures. This is the smallest and lightest high-grade portable pyrometer made. The case is aluminum, finished in black enamel. Over-all dimensions of this meter are 6¼ inches by 6 inches by 3 inches, and the weight is only 5 pounds. Scale arc 5½ inches. Highest grade movement. See table below for standard scales. With standard scale, without thermo-couple **\$40.00**

- 3707(a) PYROMETER, Hoskins,** with wall indicating meter. This meter is essentially the same as No. 3707, except that it is enclosed in a round aluminum pot for wall mounting. It is best adapted for permanent pyrometer installations. Diameter of pot, 6 inches by 3½ inches deep. Scale arc, 5½ inches. Black enamel finish. See table below for standard scales. With standard scale, without thermo-couple..... **40.00**

3707(b) THERMO-COUPLES, Low-Resistance.

Temperature Limit, °F.	B. & S. Gauge	Type No.	Price 3-Ft. Couple	Price Per Extra Ft.
2500°	2	P-505	\$11.00	\$3.00
2500°	6	503	5.50	1.25
2500°	8	501	4.00	.75
2000°	6	403	5.50	1.25
2000°	8	401	4.00	.75
2000°	11	404	3.50	.65
2000°	14	402*	3.00	.50
1500°	8	301	4.00	.75
1500°	11	304	3.50	.65
1500°	14	302*	3.00	.50
1000°	8	201	4.00	.75
1000°	11	204	3.50	.65
1000°	14	202*	3.00	.50

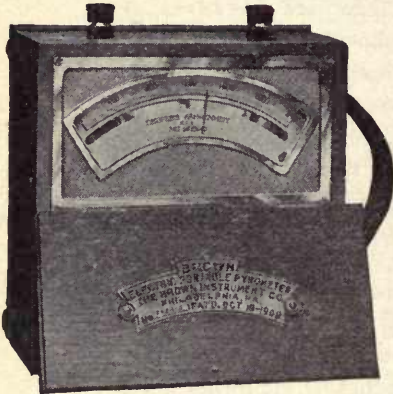
*18-inch Standard Length.

Couple handles.....**\$1.00**
Flexible Leads, 16 B. & S. Gauge, 10, 20, 25 or 30 ft. long..... **2.00**

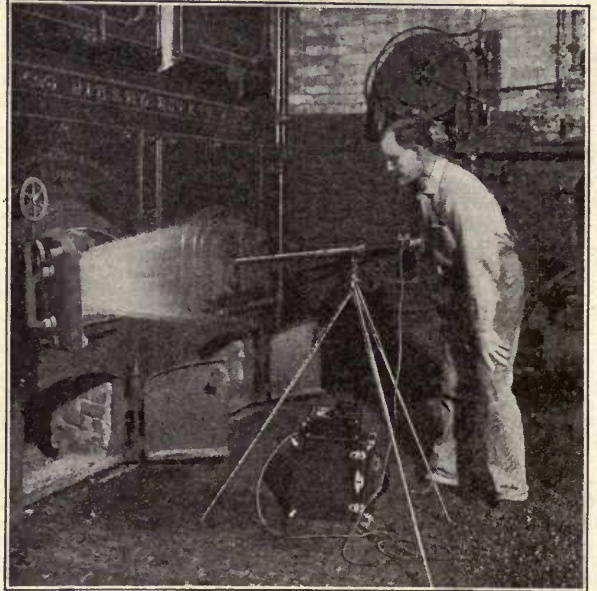
STANDARD SCALES FOR No. 3707 AND No. 3707(a)

In ordering, specify range desired and whether Fahrenheit or Centigrade divisions.

Fahrenheit	Degrees Per Division		Centigrade	Degrees Per Division
32°—1000°	10°	or	0°— 550°	5°
32°—1500°	20°	or	0°— 800°	10°
32°—2000°	20°	or	0°—1100°	10°
32°—2550°	25°	or	0°—1400°	20°



3709



3709(a)

3709 PYROMETERS—Portable Electric Pyrometer, Brown. This instrument is supplied in either the low-resistance type, with resistance of 5 ohms, for base metal thermo-couples, or high-resistance, approximately 100 ohms, for use particularly with platinum rhodium thermo-couples. The scale is 5 inches long, with mirror for accurate reading. In the high-resistance instrument a device which automatically locks the needle when the lid is closed is furnished to prevent damage in handling or in shipment. Fifteen feet of Double Conductor Wire supplied with each instrument.

Portable Pyrometer, low-resistance type, 5-inch scale.....\$ 50.00
 Portable Pyrometer, high-resistance type, 5-inch scale..... 60.00

Above prices include standard 36-inch Base Metal Thermo-couple, with low-resistance instrument. Platinum Rhodium Thermo-Couples for higher temperatures extra. Any desired Fahrenheit or Centigrade Scale can be supplied.

3709(a) RADIATION PYROMETER, Brown. For measuring temperatures above 3000° Fahrenheit, the Brown Radiation Pyrometer is one of the most accurate and satisfactory instruments to use. It can be readily focused into any furnace, or at any substance, the temperature of which is to be determined, and the temperature read off on the Indicator within a minute. The instrument is furnished complete in leather carrying case with tripod for permanent use where desired.

Complete\$125.00

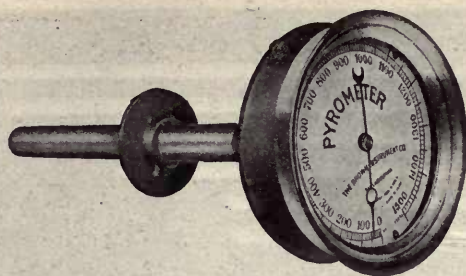
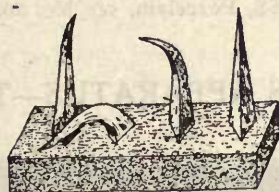


Fig. 84

3709(b) EXPANSION PYROMETERS, Brown. These instruments are not as accurate as the electric pyrometer, but for many uses where the temperature is moderate and the highest accuracy is not required, they give very satisfactory results. They are extensively used in core ovens, enameling ovens, tinning pots, and for similar uses. The instrument is furnished for use either vertically or horizontally, as desired. Unless otherwise specified, the horizontal instrument is furnished with stem 36 inches long.

Graduated to 800° Fahrenheit.....	\$12.00
Graduated to 1200° Fahrenheit.....	15.00
Graduated to 1500° Fahrenheit.....	20.00

SEGER PYROMETER CONES



3711

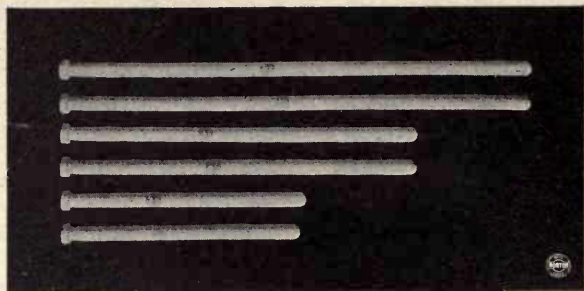
3711 PYROMETER CONES, Seger, for use in ceramic industry ranging from 590° to 1910° Centigrade. In the following table are shown temperatures at which cones begin to melt.

TABLE OF OFFICIAL MELTING POINTS OF CONES

Cone No.	Degrees C.	Degrees F.	Cone No.	Degrees C.	Degrees F.	Cone No.	Degrees C.	Degrees F.
022	590	1094	02	1110	2030	16	1450	2642
021	620	1148	01	1130	2066	17	1470	2678
020	650	1202	1	1150	2102	18	1490	2714
019	680	1256	2	1170	2138	19	1510	2750
018	710	1310	3	1190	2174	20	1530	2786
017	740	1364	4	1210	2210	26	1650	3002
016	770	1418	5	1230	2246	27	1670	3038
015	800	1472	6	1250	2282	28	1690	3074
012½	875	1607	7	1270	2318	29	1710	3110
010	950	1742	8	1290	2354	30	1730	3146
09	970	1778	9	1310	2390	31	1750	3182
08	990	1814	10	1330	2426	32	1770	3218
07	1010	1850	11	1350	2462	33	1790	3254
06	1030	1886	12	1370	2498	34	1810	3290
05	1050	1922	13	1390	2534	35	1830	3326
04	1070	1958	14	1410	2570	36	1850	3362
03	1090	1994	15	1430	2606	..	....	....

These cones are sold in single numbers packed in boxes of 100 cones each, and also in assorted numbers, any quantity as desired.

Price, per 100.....\$3.00



3711(a)

3711(a) PYROMETER TUBES OF ALUNDUM. These tubes are impervious to gases under normal pressures through a wide range of temperatures. They have a high deformation point which, in connection with their imperviousness and high thermal conductivity, are very valuable in pyrometric work.

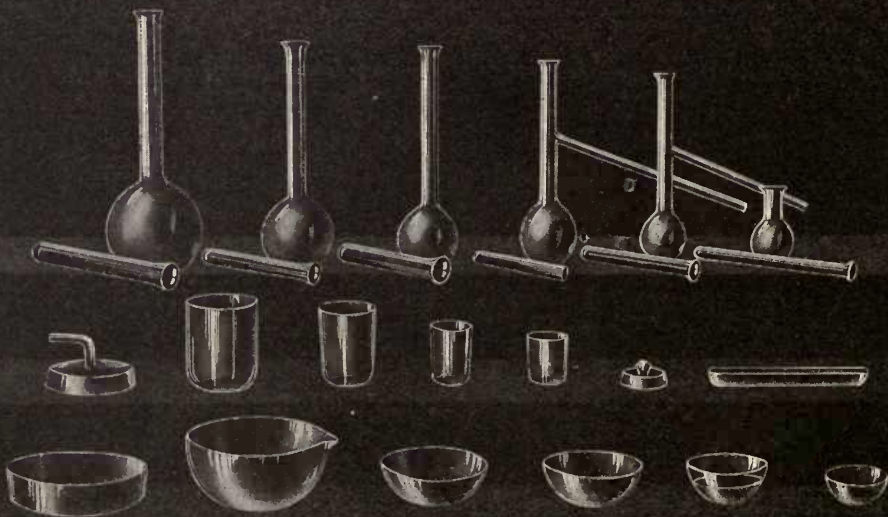
They will stand rapid changes of temperature, and are surprisingly long-lived when treated in a manner similar to the porcelain tubes.

Tube $\frac{1}{8}$ inch bore, $\frac{1}{4}$ inch outside diameter.

12 inches long, each.....	\$2.40
18 inches long, each.....	3.60
24 inches long, each.....	4.80
30 inches long, each.....	6.00
36 inches long, each.....	7.20

PYROMETER TUBES, Porcelain, see No. 4095.

QUARTZ GLASS APPARATUS—TRANSPARENT



3711(b), etc.

The valuable optical properties of quartz crystal, recognized for hundreds of years, were responsible for the earliest attempts to fuse this material into a homogeneous glass. Although most entirely without success for many years, these early efforts revealed the special physical qualities of Quartz Glass, which have since secured for it such an important position among laboratory apparatus. Its melting point lies 800°C (1400°F.) higher than that of common glass, and it may be subjected without misgiving to the greatest and most sudden temperature changes. The coefficient of expansion of Quartz Glass, between 0-1000°C is 0.00000054; i. e., a rod of Quartz Glass 1 meter long at 0°C expands 0.54 mm. when heated to 1000°C.

3711(b) BEAKERS (with or without lip).

Capacity, cc.....	25	50	100	200	250
	\$5.00	7.50	12.50	18.00	21.00

3711(c) BOATS, Combustion.

50x8x5 millimeters.....	\$3.75
65x8x5 millimeters.....	5.00
75x8x5 millimeters.....	6.50

3711(d) CRUCIBLES. The dimensions in list below refer to crucibles of the (tall, narrow) Platinum shape, which is always furnished unless Berlin Porcelain shape (low, wide) is specified. Prices are the same, capacity for capacity, in either shape.

Capacity cc.	Diameter at Top mm.	Price, each (without lid)	Price of lid (for tall shape)	Price of Rose lid with delivery tube
10	28	\$3.60	\$1.25	\$3.00
20	35	6.00	1.75	3.75
30	40	8.40	2.50	
40	45	9.25	2.75	
50	50	12.00	3.00	
60	54	13.75	3.50	
80	58	16.75	3.75	
100	65	20.00	4.00	

Prices for lids for Berlin porcelain shape are as for next larger size in tall shape. Gooch crucibles having 7 holes, 2 millimeter diameter in bottom can be supplied at 50 per cent increase on above prices.

3711(e) FLASKS can be furnished of the Standard shape as illustrated with long, narrow or short wide necks, and with round, or flat bottoms, as may be specified. Made also in Erlenmeyer shape.

Capacity, cc.....	15	25	50	100	150	200	250	500	750	1000
	\$3.30	4.50	6.00	10.75	14.50	19.25	24.00	30.00	37.50	43.50
Extra for side neck..	2.00	2.00	2.10	2.50	2.65	3.00	3.00	3.25	3.40	4.00
Extra for ground-in stopper	1.50	1.80	2.50	3.00	3.60	4.25	4.80	6.00	7.80	9.60

We call your attention to the sections on the various types of Electric Furnaces and also to the section on Furnace Cements. We are prepared to furnish in from one pound to barrel lots.

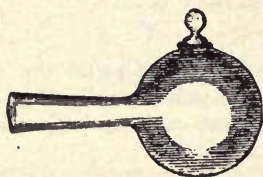
3711(f) **DISHES.** A selection is illustrated. They are made hemispherical or flat-bottomed and with or without lip as preferred.

Capacity, cc.	Edge Diam., mm.	Price, each	Capacity, cc.	Edge diam., mm.	Price, each
10	30	\$2.50	100	75	\$10.80
25	50	4.00	200	100	18.00
50	60	6.00	250	125	26.00

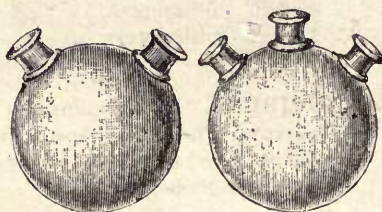
3711(g) **TEST TUBES.** These are very valuable for rapid heating, as they can be applied to the hottest flame without fear of cracking.

100x10	100x15	125x15	125x20	150x20	150x25 mm.
\$1.25	3.10	3.60	4.80	5.40	6.90

3711(h) **WEIGHTING TUBES,** 75x15 mm., with ground-in lids.....\$4.75



3714



3716

3712 **RECEIVERS, Glass, for retorts, plain.**

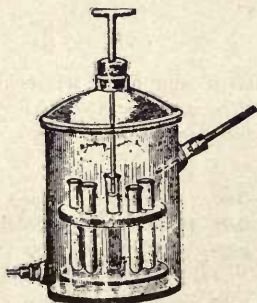
Capacity, ounces	1	2	4	8	16 qt.	1	2	4	8
Each	\$0.10	.12	.15	.25	.30	.40	.65	1.00	1.40

3714 **RECEIVERS, Glass tubulated and glass stoppered.**

Capacity, ounces	1	2	4	8	16 qt.	1	2	4	8
Each	\$0.20	.25	.30	.40	.50	.70	1.00	1.40	2.50

3716 **RECEIVERS, Glass, with two or three tubulatures.**

Capacity, pint	1/2	1	2
Each	\$0.60	.70	1.00



3717



3718

3717 **RECEIVERS, Bruehl's. For distillation in vacuum; with five cylinders.**

Capacity of cylinders, cc.	25	40	80
Each	\$7.50	10.00	13.50

3718 **RECEIVERS, Florentine. For separation of distillates which separate into heavy and light portions, such as oil and water; capacity, 500 cc.; each**.....\$1.00



3720



3721

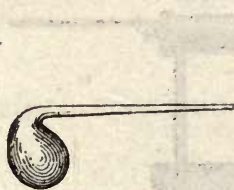
- 3720 RESPIRATORS** to prevent lead poisoning and salivation. This respirator is invaluable to those engaged in dry crushing quartz mills, quicksilver mines, white lead corroding, and all occupations where the surrounding atmosphere is filled with dust, or poisonous vapors. Each.....\$3.00

RETORT ADAPTERS, see Adapters.

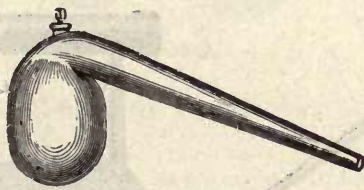
- 3721 REDUCTOR**, Blair's, for the determination of phosphorous in steel by reduction of the solution by filtration through zinc; complete as illustrated 6.00

REDUCTOR, the tube, with stopcock only..... 2.50

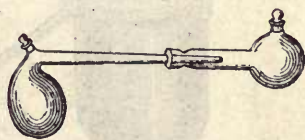
See Blair's Analysis, 7th edition, page 94.



3722



3724



3726

- 3722 RETORTS**, Glass, plain.

Capacity, ounces	2	4	8	16	32
Each	\$1.00	1.25	1.50	1.75	2.25

- 3724 RETORTS**, Glass, with glass stopper.

Capacity, ounces	2	4	8	12	16	32
Each	\$1.00	1.25	1.75	2.00	2.25	2.50

- 3726 RETORTS**, Glass, stoppered, with ground-in receiver.

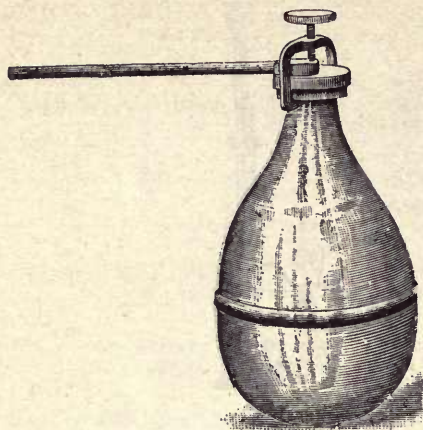
Capacity, ounces	2	4	8	16
Each	\$0.50	.75	1.00	1.50



3727

- 3727 RETORTS**, porcelain, vitrified, with tubulature stopper.

Size No.	1	2	3
Capacity, cc.	140	210	275
Each	\$2.50	4.00	4.35



3732

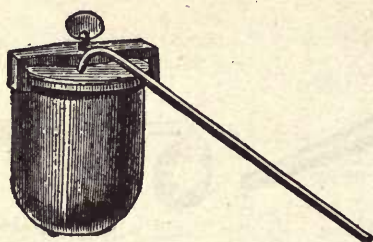


3733

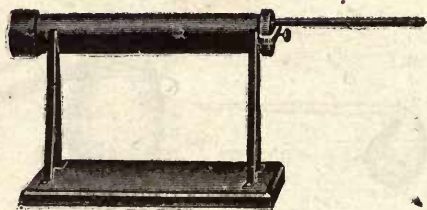
- 3732 RETORT**, of heavy polished copper, for making oxygen, with iron clamp and brass delivery tube, $\frac{1}{2}$ inch diameter.

Capacity, pints	$\frac{1}{2}$	1	2	4
Each	\$2.50	3.25	4.00	5.00

- 3733 RETORT**, of heavy polished copper, conical shape, for making oxygen. Capacity, $\frac{1}{2}$ gallon. Each.....\$9.00



3734



3735

- 3734 RETORTS**, Iron, for distilling mercury, etc.; cover removable, fastened by screw clamp.

Capacity, pints	$\frac{1}{4}$	$\frac{1}{2}$	1	2	4	8	16
Each	\$2.00	2.25	2.50	2.75	3.50	5.00	6.00

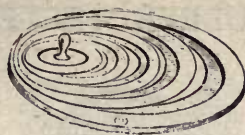
- 3735 RETORTS**, Iron, cylindrical form, for making large quantities of oxygen, consisting of barrel 40 cm. long, 50 mm. inside diameter, with exit tube, on support 9.00



3736

- 3736 RINGS**, Concentric, American porcelain, glazed on top, with cover.

Size No.	2	3	4	5	6	7
Outside diameter of largest ring, cm..	$7\frac{1}{2}$	$9\frac{1}{2}$	12	16	$20\frac{1}{2}$	25
Number rings in set.....	2	3	4	5	6	7
Per set	\$0.60	.80	1.20	1.65	2.20	2.70



3737

3737 RINGS, concentric, of copper, tinned inside.

Number of rings in set.....	3	4	5	5	7	8	9
Outside diameter, largest, inches	4	5	5½	6	8	10	12
Each	\$0.80	1.00	1.25	1.50	2.00	3.50	6.00



3738



3740

3738 RINGS, extension, to attach with clamp holder.

Sizes, inches diameter.....	2	3	4	5	6
Each	\$0.12	.15	.18	.20	.25

3740 RINGS, iron, for supports with clamp; can be attached to any size rod.

Diameter, inches	2	3	4	5	6
Each	\$0.15	.20	.20	.25	.25



3740(a)

3740(a) ROASTING DISHES, of clay, very shallow.

Diameter, inches	2½	3	4	5	6
Dozen	\$0.70	.80	.90	1.10	1.75

3741 RODS, Glass, best American lead-free, in 5-ft. lengths.

Diameter, 3-25 mm.; per pound.....	\$0.50
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RODS, Stirring, any size and thickness, with smooth rounded ends.**3742 RUBBER CAPS for Test Tubes.**

Diameter, inches	¾	1	1¼	3
Per dozen	\$0.40	.50	.60	1.25



3743

3743 RUBBER, Policemen, for scraping precipitates from walls of beakers, etc., to be used on glass rod; without rods.....\$0.10

3743(a)

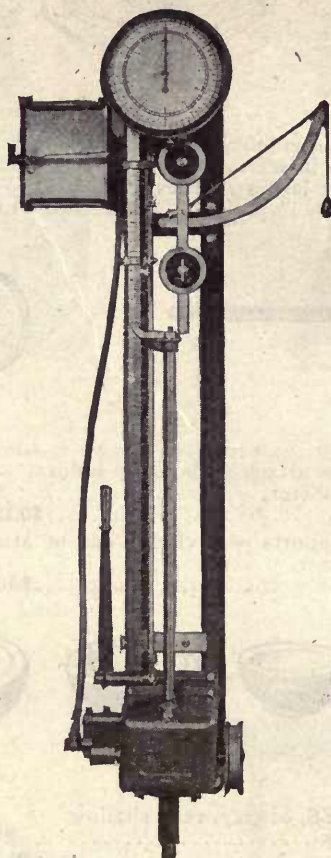
3743(a) RUBBER, Policemen, Blair's, with glass rod, for removing particles of precipitates from walls of beakers, etc., as described in Blair's Analysis of iron.

Diameter of flat end, inches	⅝	⅞
Each	\$0.10	.12
Per dozen .....	.80	1.00

3744 RUBBER, Policemen, as above, without glass rod.

Diameter of flat end, inches	⅝	⅞
Per dozen	\$0.60	.75

RUBBER TESTER



3745

3745 This machine has been developed in order to satisfy the need for an efficient machine of great accuracy which can be easily and quickly operated. This accuracy is assured by the fact that this tester is built on the deadweight or swinging pendulum principle. The tester is about seven feet high and is built without springs of any kind which influence the test. Equipped with a recording head and dial which is easily read. Strength and stretch of the material under test are recorded automatically on the chart. The design of this machine permits of its application to the testing of fabrics, cords, twines and yarns, as well as rubber. Furnished for belt or direct motor drive.

Price Upon Application

We call your attention to sections on Asphalt and Tar, Cement, Fats and Oils, Hardness of Metals, Paper, Copper, Textile and Yarn testing.

RUBBER STOPPERS



3746

3746 RUBBER, best quality; does not harden with age. Solid, or with one or two holes for tubes. Sold by weight only. Per ounce, 25c; per pound, \$2.50

No.	00	0	1	2	3	4	5	
Diameter at top, in mm.....	14	17	18	20	23	25	27	
Diameter at bottom, mm.....	10	12	15	16½	18	20	23	
Approximate weight per doz.....	2	2¼	3½	4	5	6¼	7½	
No.	6	7	8	9	10	11	12	13
Diameter at top, mm.....	32	37	41	45	50	56	65	70
Diameter at bottom, mm.....	26	30	33	37	42	50	59	60
Approximate weight per doz....	10	13	18	20	26	34	45	48

Unless otherwise ordered, we send solid rubber stoppers.

RUBBER TUBING



3748(a)

3748(a) RUBBER TUBING, Black, pure gum, medium wall, in 12-foot lengths.

Inside diam., in....	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Thickness of wall, in.	$\frac{3}{8}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{2}$
Per foot	\$0.05	.08	.10	.15	.20	.30	.50	.65	1.00

3748(b) TUBING, black, pure gum,, heavy wall, in 12-foot lengths.

inside diameter, inches.....	⅛	⅜	½	⅝	¾	⅞	1	1¼	1½
Thickness of wall, inches.....	⅞	1	1¼	1½	1¾	2	2¼	2½	2¾
Per foot	\$0.09	.12	.16	.23	.28	.40	.60		

3748(c) RUBBER TUBING, Black, pure gum, extra heavy wall, in 12-foot lengths.

Inside diameter, inches.....	⅞	1	1¼	1½	1¾	2	2¼	2½	2¾
Thickness of wall, inches.....	1	1¼	1½	1¾	2	2¼	2½	2¾	3
Per foot	\$0.24	.24	.30	.40	.60	.60			

3749 RUBBER TUBING, band, pure gum, for Gooch crucibles, etc.

Diameter, when flat, inches.....	1¼	1½	1¾	2
Per foot	\$0.20	.25	.30	.40

3750(a) RUBBER TUBING, white, medium wall, best hand made, in 12-foot lengths.

Inside diam., in.....	⅛	⅜	½	⅝	¾	⅞	1	1¼	1½
Thickness of wall, inches.	⅜	⅝	¾	⅞	1	1¼	1½	1¾	2
Per foot	\$0.05	.07	.10	.12	.15	.22	.30	.50	.60

3750(b) RUBBER TUBING, white, heavy wall, best hand made, in 12-foot lengths.

Inside diameter, inches.....			$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$
Thickness of wall, inches.....	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$
Per foot	\$0.06	.09	.12	.16	.20	.30

5750(c) RUBBER TUBING, white, extra heavy wall, in 12-foot lengths.

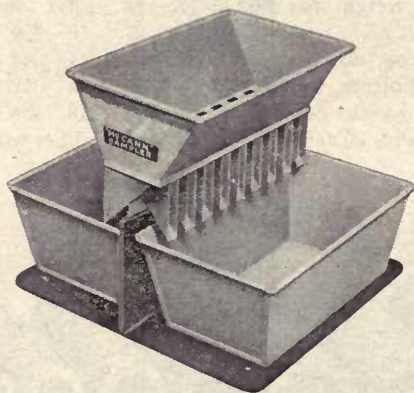
Inside diameter, inches	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$
Thickness of wall, inches.....	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{5}{8}$
Per foot	\$0.12	.16	.20	.25

3752 RUBBER TUBING, red, antimony, in 12-foot lengths.

Inside diameter, inches.....	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$
Thickness of wall, inches.....	$\frac{3}{16}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{5}{64}$	$\frac{3}{32}$	$\frac{7}{64}$	$\frac{7}{64}$
Per foot.....	\$0.05	.08	.10	.13	.18	.24	.40	.48

3753 RUBBER TUBING, red, antimony, heavy wall, in 12-foot lengths.

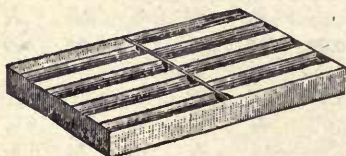
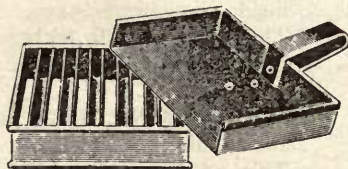
Inside diameter, inches	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$
Thickness of wall, inches.....	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$
Per foot	\$0.10	.12	.16	.20

**3755**

3755 THE McCANN SAMPLER. An improvement on all others. The heavy metal base forms the sampler support and pan stop, eliminating the clumsy frame work heretofore used. The short riffles, easily cleaned, reduce to a minimum the danger of salting. This sampler is especially constructed for rapid work. Made in three stock sizes, as follows:

Size, inches	4x6	6x10	8x12
Price, each	\$8.00	10.00	12.00

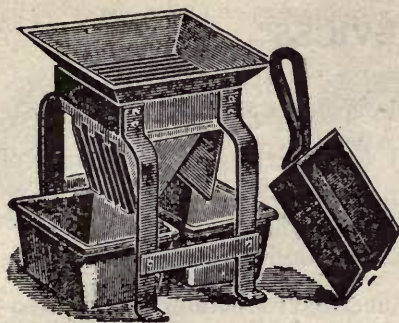
Larger sizes made to order. Prices on application.

**3756****3756(a)****3756 SAMPLING TRAYS, of Tin.**

Size, inches	6x8	9x12
Each	\$1.50	2.75

3756(a) SAMPLER and Scoops. Trays, $\frac{1}{2}$ inch wide.

Size, inches	6x6	9x9	12x12
Each	\$1.50	2.50	3.00



3756(b)



3758



3760



3761

3756(b) SAMPLERS, "Jones' Ore Sampler." Its construction facilitates quick and even sampling. It consists of hopper set in four-legged support, scoop, and four sampling pans and brush. All parts can be easily cleaned. It is made in four sizes.

Size, inches	4x4	6x6	8x10	10x18
Trays, inches	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	1
Each	\$8.00	10.00	15.00	25.00

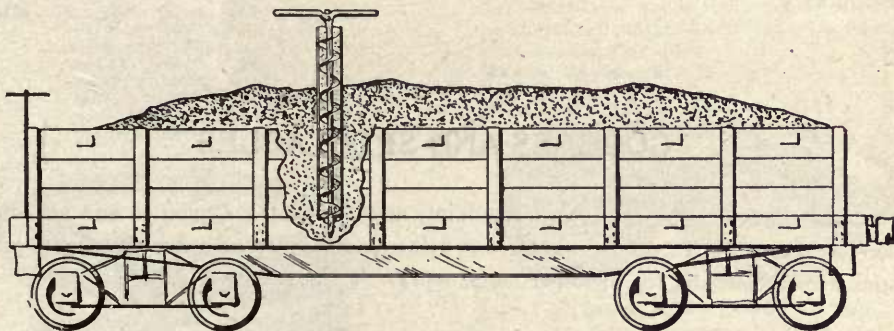
3758 SCOOPS, Agateware, 3x5 $\frac{1}{2}$ inches.....\$0.20

3760 SCOOPS, Horn, flat and wide, with square ends.

Length, ctm.	10	12	14	16
Each	\$0.12	.15	.20	.25

3761 SAMPLING AND AMALGAMATING SCOOP, Russian iron; size, 5x4 $\frac{1}{2}$ inches. Each40

3761(a) Same as above, with wood handle. Each..... .75



3761(b)

"comTeco" Sampler Imbedded in Coal

3761(b) SAMPLER, "comTeco" Reliable Coal Sampler. Decidedly practical for coal sampling from cars and piles. Devised so as to sample coal that is 3 inches or smaller in diameter. The simple construction makes it practical and easy to operate.

The cut shows the sampler imbedded in the coal. The sample has been extracted from top to bottom of the coal as it lies in the car. This is the true way of obtaining a thoroughly representative sample. The pipe thus surrounds the sample and keeps it intact until it is withdrawn from the coal. Then, by reversing the spiral, the sample of coal is emptied into a receptacle suitable for that purpose. The teeth at the bottom of the pipe act as "grippers," thus keeping the pipe from turning. These, together with the spiral, act also as a "clipper" and shear off pieces of coal that wedge between.



3761(c)

3761(c) SAND GLASSES, in wooden frames.

For, minutes	1	2	3	5	10	20	30
Each	\$0.40	.40	.50	.60	.80	1.00	1.20

3761(d) SANDPAPER, fine or coarse, per sheet.....\$0.10

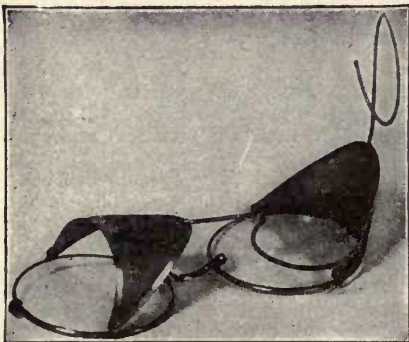
"SAFETY FIRST DEVICES"

It is estimated that in this country 60% of accidents are due to negligence on the part of employers and employees and 40% to the inevitable risks of employment. It is generally estimated that about 500,000 persons are yearly killed or incapacitated by industrial accidents, entailing a loss in earning power of at least \$250,000,000 per year. It is necessary, therefore, that attention be given to prevent such accidents. There are thousands of men in the industries who are liable to injury and a large percentage of these may escape injury by equipping themselves with safety devices. If an injury is received, knowledge and immediate accessibility to first aid appliances will greatly diminish disabilities and deaths.

Therefore, for those who are engaged in hazardous occupation we are listing complete lines of helmets, respirators, goggles, asbestos gloves and suits, rubber gloves, safety first cabinets, and so forth. The articles are scientifically correct and their plan of use is based upon the highest principles of humanity.

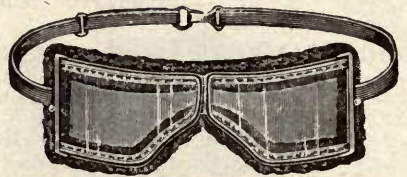
GOGGLES AND SPECTACLES

In many industries, goggles are absolutely indispensable. Chemists and all other workers who are subjected to injury from flying particles or poisonous fumes require goggles made especially for their particular work.



3754 Designed to meet the demand for a serviceable goggle at a moderate price. Light white metal frame, clear or amber lenses, $1\frac{1}{4}$ inches diameter, wire side guards which fold. Each goggle packed in curved case. Price, each.....**\$0.50**

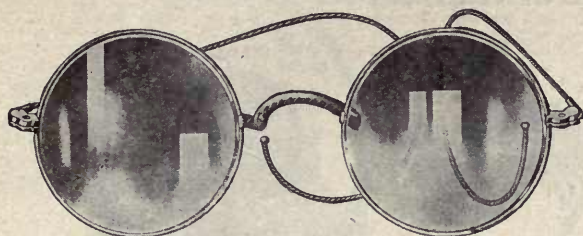
WIDE VISION GOGGLES



Patented.

3754-1 Curved metal frames, hinged center, 66 ventilation holes in each frame, bound in silk chenille, velvet or leather, as desired. Lenses furnished in glass or pyralin. Each lens is easily removed and replaced in case of breakage. Packed in individual boxes. Price, each...**\$1.00**

INDUSTRIAL SPECTACLES



An excellent spectacle for use where an eye-protector with side shields is not required. Has white metal frame, leather covered nose bridge and cable temples.

3754-2 AMBER LENSES, 1½ inches, for auto use.

3754-2a DOUBLE HEAVY, clear lenses, for grinding.

3754-2b LIGHT SMOKE, for spot welding.

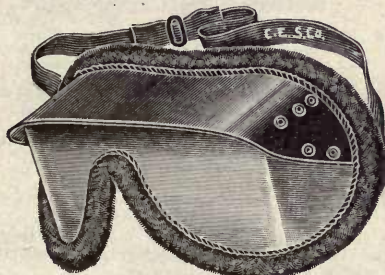
3754-2c BLUE.

3754-2d DARK SMOKE, for welding.

Price, each, Amber\$0.35

Price, each, other colors..... .50

AVIATORS' GOGGLES

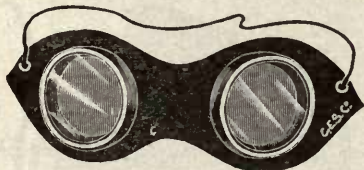


3754-4 The very latest and most approved eye protectors for aviators. They are made of extra heavy stock to prevent warping from the extreme atmospheric pressure due to the speed of the flyers. Each.....\$2.00



(PATENTED)

3754-6 Lenses are equipped with dimmer on upper portion, with clear or amber lower portion. Price, per pair.....\$1.25



3754-8 Round aluminum eye cups. Leather mask, fitted with elastic head-band. A very popular goggle for emery use; always comes in handy. Furnished in clear, blue, amber or smoked lenses. Size 1½ inches. Packed one dozen in a box.

With clear lenses. Per dozen.\$1.25

With colored lenses. Per doz. 2.50

ALL WIRE GOGGLES



3754-3 All wire goggle. This goggle is constructed of all wire, furnished in coarse or fine mesh. Neatly bound around the edge. These goggles are especially made for chippers, tannery use or for coal heavers. Price, each\$0.50

ONE-COLOR DIMMER GOGGLES



3754-5. Patented

Can be furnished in clear, light, amber, dark amber or green. Rubber binding will be furnished unless chenille is specified.

3754-5—Regular size. Each.....\$0.50

3754-5a Large size. Each..... .75

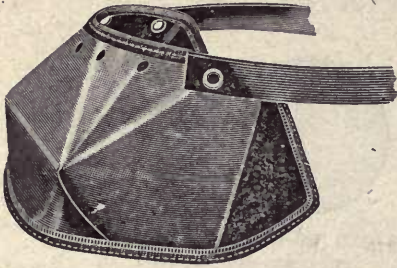


3754-7 All Red Rubber Goggle. Similar in construction to No. 101, but lighter in weight. Furnished with clear or amber oval lenses. Price, per pair.....\$0.75



3754-8a. Leather mask, edged with velvet, four glass lenses (removable), set in metal holders, adjustable head-band. Price, each.....\$0.75

EYE SHIELDS



3754-16 Velvet bound green celluloid, head straps without holes, adjustable with our special tooth-clasp fastener. Once adjusted always ready. The tem-



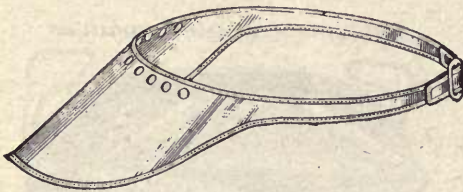
Showing Shade on Face

ple wing supports the visor and shades the eyes from the side and rear. Packed one dozen in a box. Per doz. \$1.75



3754-17

3754-17 Made from a single piece of green celluloid, adjustable to fit anyone; the lightest shade made. Packed assorted, one dozen in a box; transparent and opaque colors. Per dozen.....\$1.75



3754-18

3754-18 The most popular shade made. Correct in design, perfect fitting, and extremely durable—it can't wear out. Made from green celluloid, bound on both edges, adjustable to the head by buckle. Packed one dozen in a box. Price, per dozen 1.50

RESPIRATORS

Our Respirating devices are suitable for use in all of the so-called dusty and poisonous trades, including foundries, lead and color works, flour mills and elevators, chemical works, galvanizing plants, stone cutting yards and quarries, metal and wood-working plants, etc.



3574-19

perfect. A soft pneumatic face cushion is provided which permits of a comfortable and absolutely gas-tight contact between face of wearer and mask. Price.....\$12.00

3754-19 Here is a combination mask and respirator that will enable the wearer to breathe comfortably in an atmosphere otherwise intolerable. It is light, simple, comfortable, durable and efficient. The body of the mask is made of brass, nickel plated. The eye pieces or look-outs are carefully ground and are optically



3754-20

made of aluminum with a pneumatic rubber face cushion which will fit any face closely, but without discomfort. The vision is not obstructed. A double filtering device excludes smoke, gas, dust or other matter. Price, each.....\$2.50

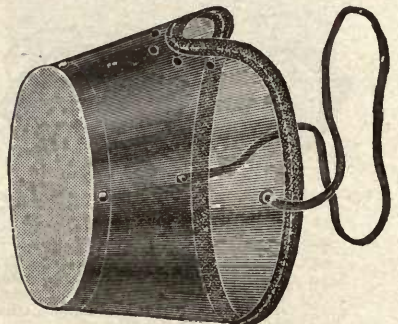
3754-20 The "Hayward" is one of the newest respirators which we can recommend as being the most efficient of any of this type. This respirator enables the wearer to breathe comfortably in an atmosphere otherwise intolerable. It is light, simple but strong in makeup. It is comfortable, efficient and cheap. It is



3754-21

3754-21 The body is made of brass enameled black, with an orifice in the front conforming to the shape of the mouth, into which a fine, moist filtering sponge is fitted. This sponge takes up the impurities in smoke, gas, etc., permitting only the pure air to pass through to the nose and mouth. A rubber face cushion is vulcanized on the inside to insure a close fit. Can be carried in the pocket, and is ready for use at all times.

Price, complete, with goggles, each.....\$3.50
Without goggles, each..... 3.00
Goggles only, Plate 704, each..... 1.25



3754-22

3754-22 Celluloid frame, gauze front. Price, each.....\$0.50

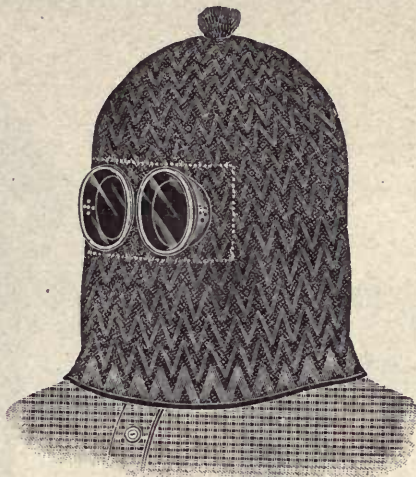
HELMETS AND MASKS

The war in Europe has taught us many lessons, some of which are applicable to our industries; so it is with the use of the **gas mask**. It is already in use in fire departments, gas works, mines, storage houses, breweries, ice factories, department stores, hotels, homes, boiler rooms, and in many places where one is in danger of being overcome by fumes.



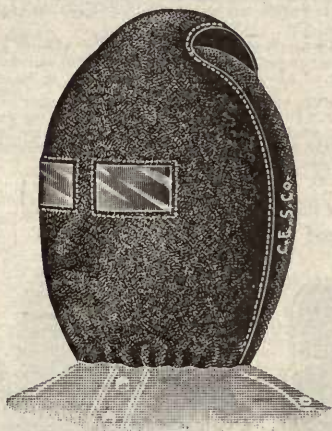
3754-23

3754-23 Made of strong khaki cloth with visor cap of the same material. Helmet is fitted with fine wire mesh screens fastened by means of snap glove fasteners. These screens are interchangeable; by renewing same helmet will last indefinitely. Fitted with front and side screens. Each.....\$4.50



3754-24

3754-24 Heavy Woolen Mask Cap, fitted with aluminum eye-cups set in flexible leather frame. Specify lenses desired when ordering. Fitted with Clear Lenses. Each.....\$3.00
Fitted with Colored Lenses. Each 3.50



3754-25

3754-25 This Mask, or Helmet, is a simple device which is similar to the one used by the European soldier to protect him from gas and smoke fumes. It contains about 45 cubic feet or a sufficient quantity of air to sustain a person from five to eight minutes; and the manner of obtaining this air is quick and effective, simply shake (swing) the mask to and fro three or four times and put it quickly over the head. Price, each\$3.50

Water-Proof and Damp-Proof Wood Soled Shoes

These shoes are built to retard the action of salt, acids and other harmful ingredients on rubber or common shoes, and are used by hundreds of Tanneries, Chemical Manufacturers, Packers, Brick and Tile Manufacturers.

3754-27 Price, unlined.....\$3.00
3754-27a Price, felt lined..... 4.00
3754-27b Price, oil grain..... 5.00



3754-26 ACID HELMET. 5.00



3754-27

Water-Proof, Damp-Proof, Dry,
Warm, Comfortable

ASBESTOS PRODUCTS

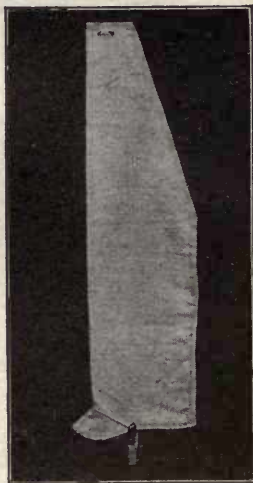
Each year the demand is becoming greater for the use of clothing of various descriptions by manufacturers, for the use of their employees who are obliged to come in contact with heat and fluids that are destructive to ordinary clothing, and often injure and even maim the employees.



3754-28



3754-30



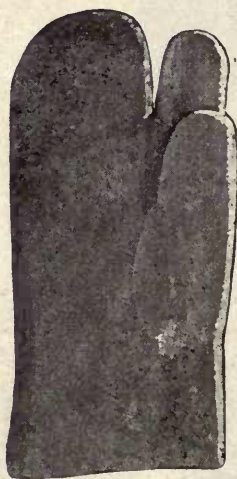
3754-29

- 3754-28 LEGGINGS.** Asbestos Leggings, absolutely fire-proof, made of heavy weight asbestos cloth, with covering over instep and foot, strap under arch of foot, fastened on side with leather strap and buckles, metal stiffening on side to prevent sagging, all seams reinforced with stitching and lined. Price according to market value of asbestos. Please write us if interested.
- 3754-29 HIP LEGGINGS.** This legging is a 36-inch long slip-on legging. Very easily taken off and an article very much liked, is made from the strongest asbestos cloth and extra heavy fireproofed duck. Price according to market value of asbestos. Please write us if interested.
- 3754-30 ASBESTOS SUITS.** An asbestos suit weighs no more than a suit ordinarily worn about a foundry, besides offers real protection to the body against constant dangers. Every suit is well made from only the best asbestos materials, and will wear indefinitely. Any kind of asbestos garment can be furnished. We also make to order any kind of asbestos suit. Price according to market value of asbestos. Please write us if interested.

ASBESTOS GLOVES Absolutely Fireproof



3754-31



3754-32



3754-33

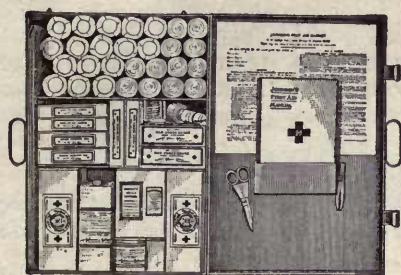
- 3754-31 ASBESTOS GLOVE.** Thumb and four fingers. Per pair.....\$4.00
- 3754-32 ASBESTOS MITTEN.** Thumb and index finger, fleece lined. Per pair..... 3.50
- 3754-33 ASBESTOS MITTEN.** Full hand and thumb, 11 inches long. Per pair..... 3.00
- 3754-34 SKELETON GLOVE.** Unlined, 11 inches long. Per pair..... 3.00

RUBBER GLOVES

RUBBER GLOVES, see Gloves.

SAFETY FIRST SUNDRIES

FIRST AID CABINETS



3754-35



3754-36

The necessity and value of prompt and efficient first aid in injuries needs no comment. A First Aid Cabinet should be in every office, shop, factory, foundry, mine, camp, home, or wherever accidents may occur.

The cabinet contains every conceivable article necessary in case of an emergency. It includes Absorbent Cotton, Surgical and Styptic Gauze, Gauze and Cotton Bandages, Powdered Antiseptic Soap, Adhesive Plaster, Aromatic Spirits Ammonia, Peroxide of Hydrogen, Antiseptic Tablets, Tincture Arnica, and other Antiseptic Ointments.

3754-35	Price	\$9.00
3754-36	Price	9.00

FIRST AID ACCESSORIES—J. AND J.

ABSORBENT COTTON, Red Cross Sterilized. Plain, blue carton and blue tissue; 1 pound cartons. Each.....\$0.65
Also ½, 1, 2, 4, 8 ounce cartons.

Z. O. ADHESIVE PLASTER.

1-yard rolls, 7 inches wide, plain or porous; dozen.....\$ 4.20
5-yard rolls, 2 inches wide, plain or porous; dozen..... 15.00
Also on spools in widths from ½ to 4 inches; dozen.....\$3.00 to 9.00

PLAIN GAUZE, Red Cross Gauze, sterilized:

1 yard, in carton; per dozen.....\$ 1.75
5 yards, in carton; per dozen..... 7.20
25 yards, in carton; per dozen..... 30.00

BANDAGES, Linton Gauze. Each bandage wrapped, 10 yards long; in boxes of one doz. each; widths from 1 to 4 inches; per doz...\$0.75 to 2.25
Each in sealed cylinders, 10 yards long, one doz. in carton; widths from 1 to 4 inches; per doz.....\$0.75 to 2.25

JOHNSON'S ANTISEPTIC GAUZE. Borated, Boralum, Carbulated, Corrosive Sublimate, Iodoform 5%, and Iodoform 10%; furnished in rolls of 1 and 5 yards at prevailing prices.



3762-3763

3762	SCORIFIERS. Regular or deep pattern.								
	Diameter, inches.....	1½	2	2¼	2½	2¾	3	3½	4
	Price, per 1,000.....	\$12.00	12.00	12.00	13.00	16.00	20.00	25.00	30.00
	No. in bbl.....	3850	2000	2000	1900	1400	1000	800	600
	Gross weight, lbs.....	250	285	305	310	290	290	275	275

3763

SCORIFIERS, Bartlett Style. Shallow bowl, especially recommended for use where a large oxidizing surface is desired; for instance, in the scorification of a heavy sulphide ore.

Diameter, inches.....	2¼	2½	3
Price per 1,000.....	\$12.00	13.00	20.00
No. in bbl.	1900	1700	950
Gross weight, lbs.....	295	285	275

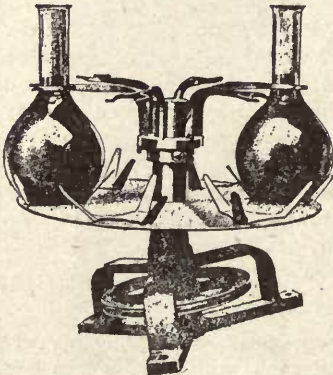


3763(a)



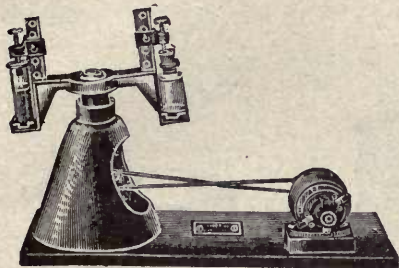
3763(b)

3763(a)	SCRAPERS, Flat, for cleaning muffles.....	\$1.50
3763(b)	SCRAPERS, Bent, for cleaning muffles.....	1.50

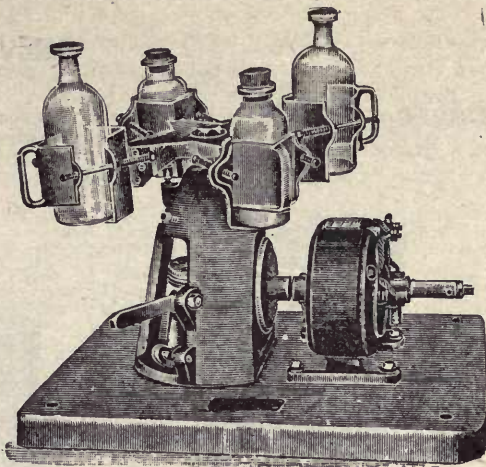


3763(c)

3763(c)	SHAKING MACHINE. Camp's (patented). Will hold six flasks, any size from 6 to 24 ounces capacity. Requires 1/25th horse-power to operate	\$30.00
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3763(d)



3763(e)

3763(d) SHAKING APPARATUS, 2-bottle, 50 cc. Shaker. The Shaker will carry two small bottles or tubes up to 50 cc. capacity, e. g., bottles in which suspected sputum is collected. It has a speed of about 1000 r. p. m., thus subjecting the contents of the bottles or tubes to very vigorous shaking.

110 volt direct current.....	\$55.00
110 volt alternating current, 60 cycle.....	65.00
220 volt direct current	59.00
220 volt alternating current, 60 cycle.....	67.00

3763(e) SHAKING APPARATUS, 4-bottle, 1000 cc. Shaker. Ordinary bottles 200 cc. to 1000 cc. capacity can be held by the spring clamps, and smaller bottles or tubes may be held by fitting blocks. Maximum allowable speed for this Shaker with small bottles is about 600 r. p. m.; with 1000 cc. bottles, about 300 r. p. m.

110 volt direct current.....	90.00
110 volt alternating current, 60 cycle.....	97.00
220 volt direct current	93.00
220 volt alternating current, 60 cycle.....	99.00



3764



3766

3764 SHEARS, Tinner's Snips.

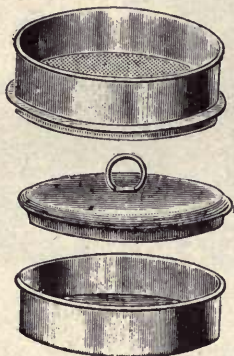
Length of cut, inches.....	2	2½	3	4	4½
Each	\$1.25	1.40	1.50	2.50	3.00

3766 SHEARS, for cutting paper.

Total length, inches	7	8	9
Each	\$0.45	.60	.75

SIEVES

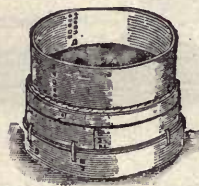
SIEVES—Our Seamless brass frame. Sieves are made in one piece, without soldering, are smooth, and no rough places where the sample can lodge, and have perfectly fitting bottoms and covers.



3768



3770



3772

3768 SIEVES, Brass gauze, seamless brass frame, with pan bottom. Diameter, 5 inches.									
Meshes per lin. inch.....	1	2	4	6	8	10	20	30	40
Each	\$1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.60	1.70
Meshes per lin. inch.....			50	60	80	100	120	150	200
Each			\$1.75	1.80	2.00	2.10	2.40	4.50	6.00
Covers for above									\$0.50
Extra Bottoms for above.....									.50

3768(a) SIEVES, Brass, gauze, seamless brass frame, with pan bottom. Diameter, 8 inches									
Meshes per lin. inch....	1	2	4	6	8	10	20	30	40
Each	\$2.10	2.10	2.10	2.10	2.10	2.10	2.25	2.30	2.40
Meshes per lin. inch.....			50	60	80	100	120	150	200
Each			\$2.45	2.55	2.70	3.15	3.90	6.75	9.00
Covers for above									\$0.75
Extra Bottoms for above.....									.50

3770 SIEVES, in sets of 5; brass gauze, seamless brass frame, one sieve fitting on top of another with one cover and bottom, for separating substances into different grades of fineness. Meshes, 20, 40, 60, 80, 100.	
Diameter, 5 inches, set	9.00
Diameter, 8 inches, set.....	13.50

3772 SIEVES, Brass gauze, wooden frame.						
Diameter, 6 inches, mesh.....	10	20	40	60	80	100
Each	\$0.60	.65	.75	.90	1.15	1.35

SIEVES, as above, 8 inches diam....\$0.65 .75 .90 1.05 1.50 1.90

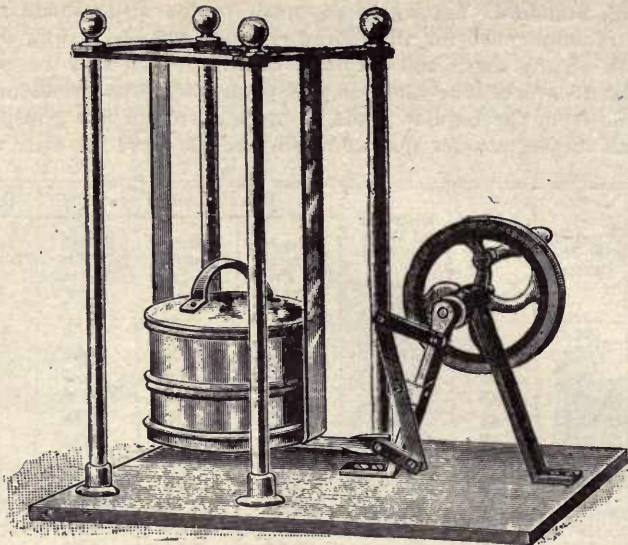
SIEVES, as above, 12 inches diam....\$1.15 1.15 1.50 1.80 2.40 3.60

Sieves of any kind made according to specifications. Urgent orders given immediate attention.

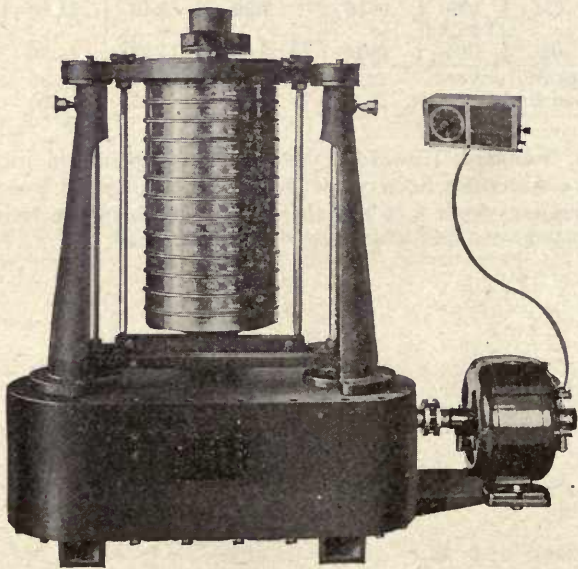
3772(a) SIEVES, Standard. Testing Sieves made to the Tyler Standard Screen Scale are recommended for all laboratory work, but the testing sieves from wire cloth of any mesh and diameter of wire which may be required will be made to order. The table on this page shows the prices on testing sieves made from the regular grade of brass wire and fine phosphor bronze wire cloth. Sieves coarser than 20 mesh take the same list price as 20 mesh.

Opening in Inches	Opening in Millimeters	Mesh	Diameter of Wire Decimal of an Inch	Brass Frames Covered with Brass Wire Cloth				
				6-Inch Diameter List Price Each	7-Inch Diameter List Price Each	8-Inch Diameter List Price Each	10-Inch Diameter List Price Each	12-Inch Diameter List Price Each
.0340	.864	20	.016	\$2.10	\$2.60	\$3.00	\$4.00	\$4.90
.0198	.503	30	.0135	2.10	2.60	3.00	4.00	4.90
.0176	.447	35	.011	2.10	2.60	3.00	4.00	4.90
.0150	.381	40	.010	2.10	2.60	3.00	4.00	4.90
.0127	.323	45	.0095	2.20	2.70	3.25	4.25	5.25
.0110	.279	50	.009	2.20	2.70	3.25	4.25	5.25
.0087	.221	60	.008	2.20	2.70	3.25	4.25	5.25
.0073	.185	70	.007	2.30	2.85	3.40	4.50	5.65
.0068	.173	80	.00575	2.50	3.10	3.70	5.00	6.30
.0059	.150	90	.00525	2.70	3.30	4.00	5.45	7.00
.005	.140	100	.0045	2.85	3.55	4.30	5.90	7.60
.0051	.130	110	.004	2.90	3.65	4.45	6.10	7.85
.0046	.117	120	.0037	3.00	3.80	4.60	6.35	8.25
.0043	.109	130	.0034	3.15	4.00	4.95	6.80	8.90
.0042	.107	140	.0029	3.35	4.25	5.20	7.30	9.55
.0041	.104	150	.0026	3.55	4.50	5.50	7.75	10.20
.0038	.096	160	.0025	3.75	4.75	5.80	8.20	10.85
.0035	.089	170	.0024	4.00	5.20	6.40	9.10	12.15
.0033	.084	180	.0023	4.40	5.65	7.00	10.00	13.45
.0031	.079	190	.0022	4.60	5.90	7.35	10.50	14.10
.0029	.074	200	.0021	4.75	6.15	7.60	10.95	14.75
.0028	.071	220	.0017	5.10	6.60	8.20	11.85	16.00
.0026	.066	240	.0016	5.80	7.50	9.40	13.70	18.65
.0022	.056	260	.0016	6.50	8.45	10.60	15.50	21.25
		Twill'd						
.0020	.051	280	.0016	7.20	9.40	11.80	17.35	23.85
		Twill'd						
.0017	.043	300	.0016	8.60	11.25	14.20	21.00	29.00
Brass pan and cover.....				\$1.75	\$2.00	\$2.25	\$2.75	\$3.25
Tinned pan and cover.....				1.50	1.75	2.00	2.50	3.00

3772(b) SIEVES, Standard, Howard & Morse's brass gauze tin frames, according to American Society of Civil Engineers, set of 8 sieves, varying in diameter from 5 to 8 inches, one of each of the following 10-20-30-40-50-80-100 and 200 mesh. Per set nested.....\$40.00

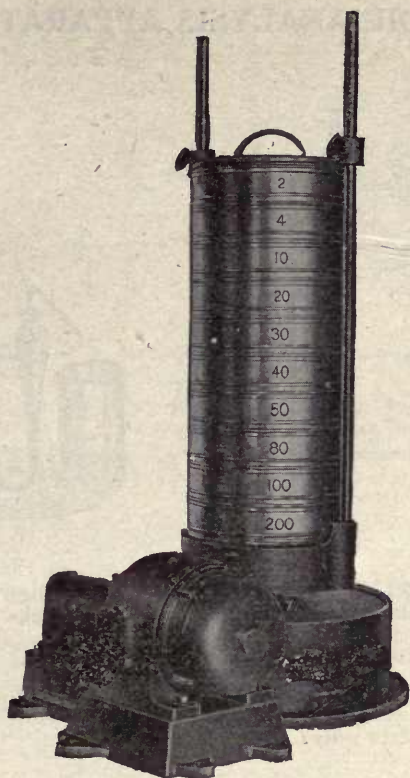


3772(c) SHAKING APPARATUS, adapted for use with hand or power. For the purpose of separating or mixing substances into different grades of fineness. Will hold from one to four sieves. Apparatus is fastened to a finished wood base, 12½ by 22 inches. Height over all, 17 inches. Made for either 5, 6 or 8 inch sieves.....\$35.00



3772(d) SIEVE SHAKER, Ro-Tap Testing Sieve Shaker, equipped with 110-volt direct current motor, or with 110-volt 60-cycle alternating current motor. (No testing sieves included.).....\$185.00

3772(e) STOP-RITE TIME SWITCH (extra)..... 18.50



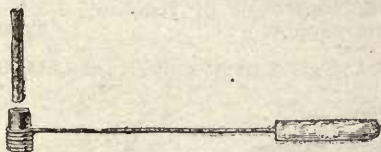
3772(f)

- 3772(f) **SIEVE AGITATOR.** For sieves 8 inches diameter. The mechanical action produces a semi-rotary and undulatory movement towards acceleration of action. For hand power. Without sieves.....\$110.00
- 3772(g) **SIEVE AGITATOR.** Same as No. 3772(f), but with direct connected D. C. electric motor..... 200.00
- 3772(h) **SIEVE AGITATOR.** Same as No. 3772(f), but with alternating current motor..... 250.00



3772(j)

- 3772(j) **SLIDE RULE,** for chemists—patented, adjustable, engine divided, divisions on white facings with frameless glass indicator. In morocco case with directions for use.....\$7.50
- 3772(k) **SLIDE RULE,** The Multiplex, with cube and reciprocal scales; 10 inches; divisions on white ivory, glass indicator and Mack improved automatic adjustment; in case with book of directions, net..... 5.00



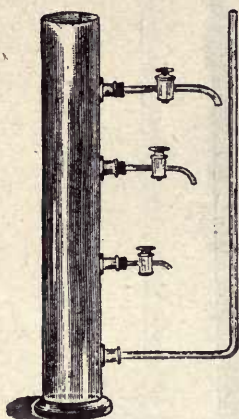
3772(m)



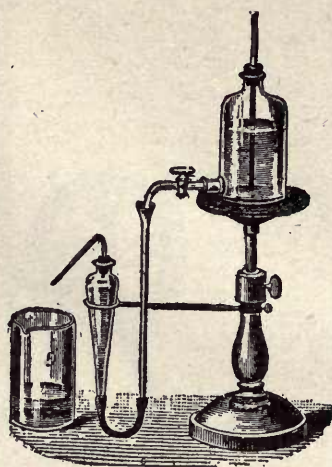
3772(n)

- 3772(m) **SODIUM SPOON (Capsule).** Made of brass with handle. Complete with ramrod\$0.50
- 3772(n) **SODIUM SPOON.** Brass gauze bowl with cover and handle.....60

SOIL ANALYSIS APPARATUS

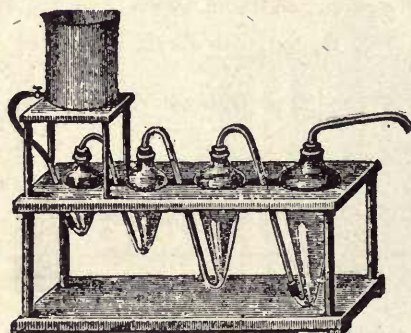


3773

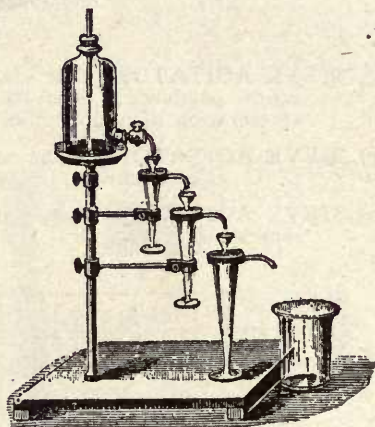


3774

- 3773 KNOPP'S ELUTRIATING APPARATUS**, 20 in. high and $3\frac{1}{4}$ in. diameter with 4 tabulatures, 3 of which with stopcocks and one with tube fitted with rubber stoppers.....\$15.00
Cylinder, with 4 tubulatures only..... 9.00
- 3774 MASURE'S ELUTRIATING APPARATUS**, consisting of reservoir, funnel, beaker, etc., with support..... 10.00
The glass parts only..... 8.00



3776



3778

- 3776 NOEBEL'S ELUTRIATING APPARATUS**, the complete set, capacity of reservoirs $\frac{1}{2}$, 1, 2 and 4 pints, with support.....\$15.00
- 3776a NOEBEL'S ELUTRIATING APPARATUS**, the glass parts only..... 8.00
- 3778 SCHULZE'S ELUTRIATING APPARATUS**, consisting of receiver, 3 test glasses with funnel tops, beaker and support..... 22.00
- 3778a SCHULZE'S ELUTRIATING APPARATUS**, the glass parts only..... 15.00

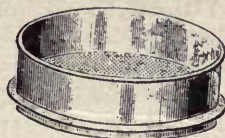


3780

- 3780 SEPARATOR**, Broegger-Harada's, with 10—15 mm. bore of upper stopcock 15.00



3781



3781(a)

3781 ELUTRIATING FLASKS, Benningson's, for soil analysis, capacity of bulb about 300cc., with neck graduated to 40cc. in 1cc.\$ 3.50

3781(a) SIEVES, For soil analysis, perforated brass plate in seamless brass frame, with circular holes of $\frac{1}{2}$, 1 and 2 mm. diameter, in sets of 3 sieves, with one bottom and one cover.

Diameter, inches.....	4	5	8
Per set of three.....	\$7.50	9.00	15.00

3781(b) SIEVES, For soil analysis, as above, in set of five sieves, with pan and cover with circular holes of $\frac{1}{2}$, 1, 2 and 3 and 5 mm. in diameter.

Per set, 5 inches in diameter.....\$15.00

Per set 6 inches in diameter.

Per set 8 inches in diameter.

3781(c) SIEVES, Single sieves of above. Each supplied with pan bottom..... 3.60



3788



3786

3782 SPATULAS, Bone, best quality; spatula on both ends.

Length, inches.....	6	7
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Each	\$0.15	.25
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3784 SPATULAS, Glass, size 6 inches.....\$0.20

3786 SPATULAS, Glass, size 6 inches, with ground blade..... .25

3788 SPATULAS, Horn, best quality, spatula on both ends.

Length, inches	4	5	6 $\frac{1}{2}$	8	10	12
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Each	\$0.10	.15	.20	.25	.35	.50
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3789

3789 SPATULAS, Porcelain, glazed throughout. Long spatula one end, knob on the other.

Size number.....	1	2	3	4	5	6
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Length, mm.....	115	155	200	275	310	442
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Each	\$0.35	.42	.62	.85	1.10	2.65
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3790

3790 SPATULAS, Porcelain, glazed throughout, spatula both ends.

Size number.....	1	2	3	4	5	5a
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Length, mm.....	105	120	140	160	190	203	212	225
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Each	\$0.25	.35	.42	.55	.72	.85
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3791

3791 SPATULAS, Porcelain, spoon on one end, spatula on the other.

Size number.....	1	1a	2	3	4	4a	5	6
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Length, mm.....	96	120	140	160	190	203	247	490
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Each	\$0.21	.27	.38	.50	.60	.75	.85	2.75
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3791(a)



3792

3791(a) SPATULAS, Nickel, solid, spatula on both ends.

Length, cm.....	12	15	18	21
Each	\$0.75	1.00	1.25	1.50

3792 SPATULAS, Steel, nickel-plated, with metal handle.

Length, inches.....	3	4	5	6	8	10
Each	\$0.55	.75	.80	.90	1.25	1.65



3794



3795-3797

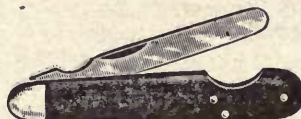
3794 SPATULAS, Steel, with wooden handle.

Length of blade, inches.....	3	4	5	6	7	8	10	12
Each	\$0.35	.40	.45	.60	.75	.90	1.50	2.50

3795 SPATULA, Steel, flexible narrow point, for weighing, 5-inch blade.....\$0.75

3796 SPATULA, Steel, flexible narrow point, for weighing, 4-inch blade......60

3797 SPATULA, Steel, flexible narrow point, for weighing, 3-inch blade......50



3797(a)

3797(a) SPATULAS, Steel, folding blade, 2½ inches long.....\$2.50

SPATULAS, Platinum, see No. 3653(d).

3798 SPONGES, Sheep's Wool, for laboratory use, per lb., from \$1.00 to.....\$2.50



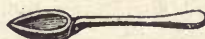
3800

3800 DEFLAGRATING SPOON. Made of brass. Diameter of bowl, ½ inch...\$0.25

3801 DEFLAGRATING SPOON. Same as No. 3800. Diameter, 1 inch......50

3802 SPOONS, Bone, best quality.

Length, inches.....	5	6½
Each	\$0.20	.25



3804



3806

3804 SPOONS Light Glass.

	Tea Spoon	Table Spoon
Each	\$0.20	.40

3806 SPOONS, Heavy cut glass.

	Tea-Spoon	Dessert Spoon	Table Spoon
Each	\$0.35	.50	.75



3808



3810

3808 SPOONS, Horn, best quality.

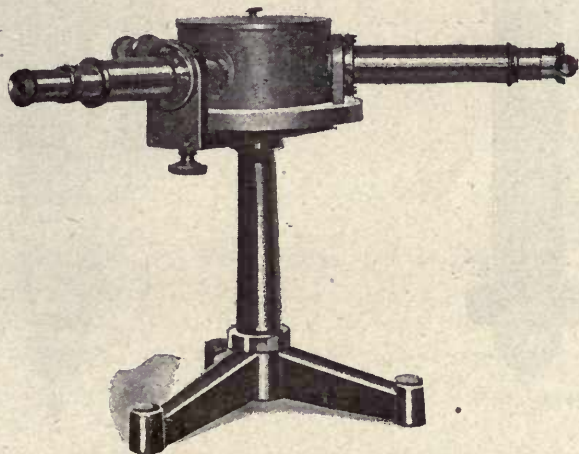
Length, inches.....	4	5	6	8	10	12
Each	\$0.20	.25	.30	.35	.45	.65

3810 SPOONS, Horn, with spatula end.

Length, inches.....	5	6	8	10½
Each	\$0.30	.35	.40	.55

SPECTROSCOPES AND ACCESSORIES

We are capable of supplying any of the standard American made spectroscopes. Below we list a type of spectroscope which is in general use in laboratories today. The smaller instrument is especially adapted for school use. Any apparatus embodying special optical features can be furnished upon receipt of specifications. Estimates cheerfully given on any optical instruments, and repair of same.



3810-1

3810-1 SPECTROSCOPE. The usual standard type fitted with collimator, observing telescope and scale tube. The collimator is stationary and fitted with adjustable slit having jaws of German silver. The observing telescope has coarse adjustment only around the axis. Both collimator and observing telescope are fitted with achromatic objectives of 25 mm. aperture. The other necessary adjustments for adjusting the tubes in horizontal position are provided. This instrument is now furnished with a liquid prism for bi-sulphide of carbon, but provision is made for adjusting scale tube and observing telescope so that other prisms of any dispersion may be used. The cost of the instrument including prism is.....\$48.00

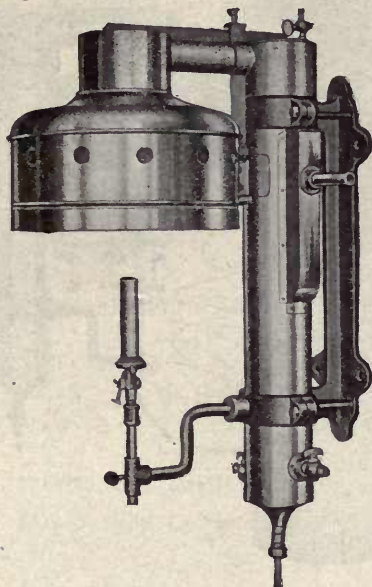
Accessories for this instrument:

1st. Comparison Prism for Slit.....	\$ 5.00
2nd. Rack and Pinion Motion for Slit.....	5.00
3rd. Slow Adjustment for observing telescope (tangent screw).....	5.00
4th. Illuminating Burner (gas) for scale tube or collimator.....	3.00

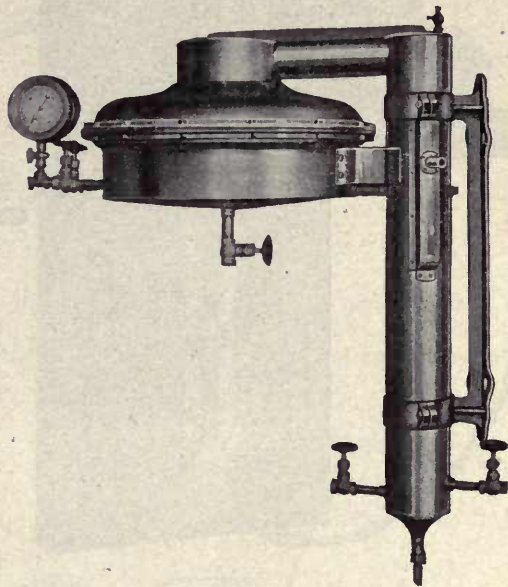
3810-2 Is a less expensive instrument for school use which is smaller, but otherwise of the same type as No. 3810-1.

Price 30.00

THE IMPROVED "ROCHLITZ" AUTOMATIC WATER STILL



3812



3812(a)

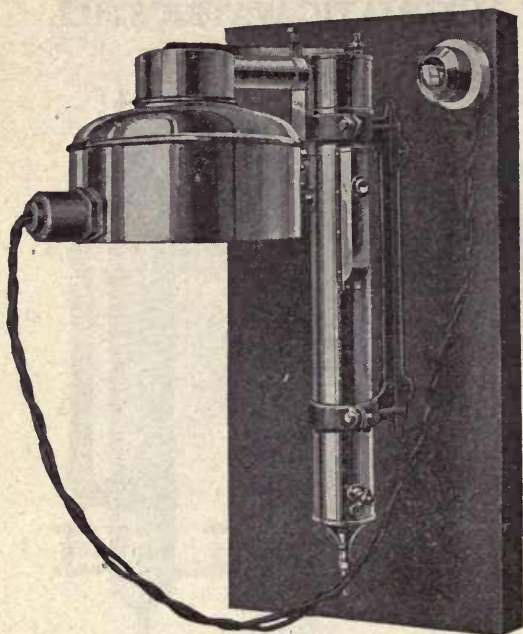
It is well known that the absorptive power of distilled water is second to only that of acids. All but the precious metals and block tin are susceptible to its action, and if it comes in contact with tanks, or pipes of other metals, it will be found to contain slight quantities of them in solution. In order to render this contamination impossible, the "Rochlitz" Automatic Water Stills are lined throughout with purest block tin.

3812 STILL, Automatic, Gas operated (Rochlitz improved). Simple in construction. All parts readily accessible for cleaning when desired. Easily operated and guaranteed to give entire satisfaction. This still is the Rochlitz Still greatly improved and enlarged, made of copper and brass throughout, tin lined inside so that the water comes in contact with the tin only. The outside is nickel plated.

Size	1	2	3	4	5
Capacity 1 hour in gals.....	$\frac{1}{2}$	1	2	3	5
Price	\$30.00	40.00	75.00	105.00	155.00

3812(a) STILL, Automatic, Steam operated, "Rochlitz" improved. Attachable to any boiler, costs but little to install, simple and effective in operation. Produces Distilled Water at average cost of 1/10 of a cent per gallon. All impurities are thrown down in the boiling process to the apex of the conical bottom at which point is located the drain pipe and valve. By opening this valve at proper intervals, depending upon the character of the water distilled, all impurities are thoroughly flushed out, keeping the boiling chamber clean and wholesome.

Size	1	2	3	4	5	6	7
Capacity 1 hour in gal.	1	2	3	5	8	10	15
Price	\$45.00	65.00	100.00	125.00	175.00	225.00	300.00



3812b

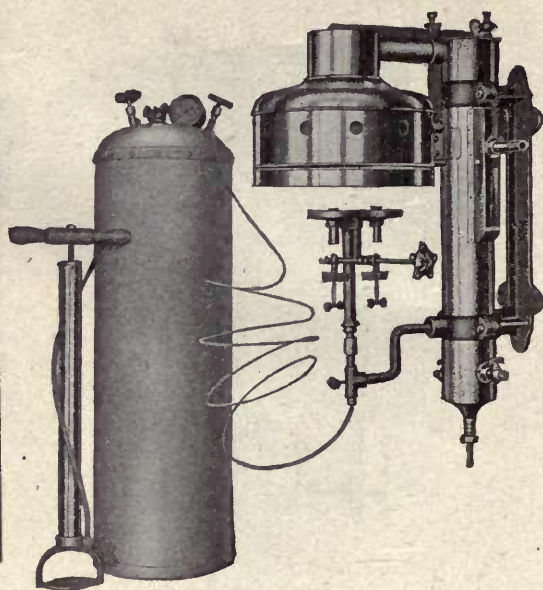
3812b STILL, Automatic, Electrically operated, "Rochlitz" improved. Equipped with Westinghouse Bayonet Type Immersion Heaters. Easily cleaned because removable. Efficient because all heat must go into liquid. Strong and rugged and designed to withstand abuse.

Control Switch and 6 feet of cord supplied.

Heating units furnished for all standard voltages up to 250 volts; alternating or direct current.

Capacities $\frac{1}{2}$ to 5 gallons per hour.

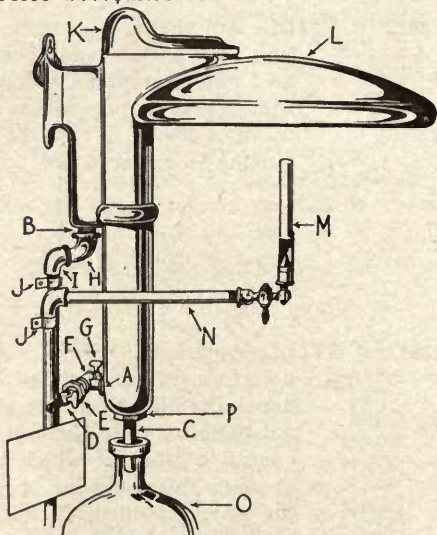
Size	1	2	3	4	5
Capacity 1 hour in gal. ...	$\frac{1}{2}$	1	2	3	5
Price ...	\$65.00	75.00	100.00	150.00	200.00



3813c

3813c STILL, Automatic, Gasoline or kerosene operated, "Rochlitz," powerful, wickless, odorless burners.

Size	1	2	3	4	5
Capacity in 1 hour ...	$\frac{1}{2}$	1	2	3	5
Price	\$40.00	50.00	90.00	115.00	165.00



3813

3813 DISTILLING APPARATUS, Green's Automatic. The cheapest and best still of like capacity on the market. Capacity $\frac{3}{4}$ to 1 gallon per hour. Price, with Aluminized Iron finish, net.....**\$25.00**



3814

- 3814 DISTILLING APPARATUS**, For water, spirits, or other liquids; made of heavy copper, tin lined, with movable head connected with pure block tin condensing worm enclosed in zinc vessel, with proper inlets and outlets; all stills tubulated.

Capacity, gallons.....	$\frac{1}{2}$	1	2	3	5
Each	\$13.00	17.00	22.00	25.00	30.00
3814(a) The Retort only.....	9.00	12.00	15.00	17.00	20.00
3814(b) The Condenser only.....	4.50	6.00	7.50	8.50	10.50

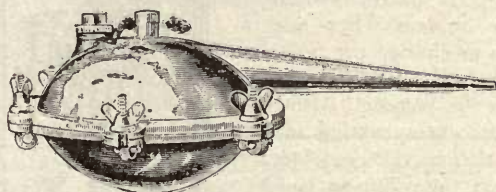


3814(c)

Pattern of larger sizes

- 3814(c) DISTILLING APPARATUS**, for destructive distillation. For distillation of heavy oils and liquids or solids requiring a high heat. The distillation may be made by live steam or by direct heat, with or without agitation by hot air blown through as desired. The still is made of heavy copper and will be found a great convenience in many laboratories.

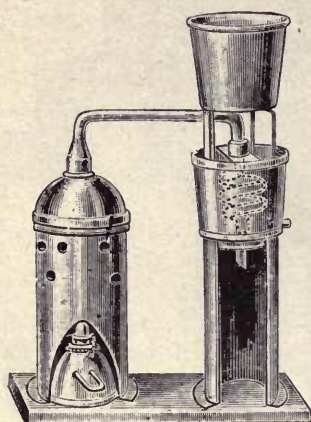
Capacity, gallon.....	$\frac{1}{2}$	1	2	3	5
Each	\$20.00	30.00	40.00	45.00	50.00



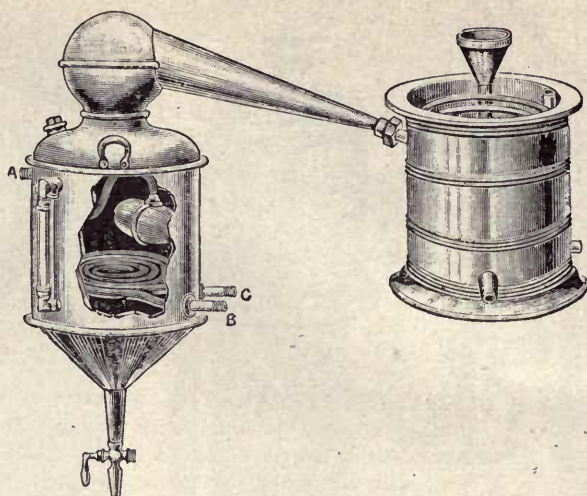
3815

- 3815 DISTILLING APPARATUS**, of extra heavy copper, all seams brazed or hard soldered for high temperature; with flanges secured by six thumbscrew clamps, easily taken apart to remove solids.

Capacity, gallons.....	$\frac{1}{2}$	1	2	3
Each	\$40.00	45.00	50.00	60.00



3815(a)



3815(b)

3815(a) DISTILLING APPARATUS, Sallerton's, made of copper, for determining percentage of Alcohol in Wine, Beer, Cider, etc. Capacity, one-third pint\$12.50

3815(b) AUTOMATIC STILL—For making distilled water by steam heat, made of heavy copper with steam coil near the bottom, provided with a valve which controls the water supply automatically; also water gauge and union, connected with pure block tin condensing worm, enclosed in zinc vessel, with proper inlets.

Very efficient and economical, in two sizes, 3 gallons and 5 gallons capacity; 3 gallon size capacity, about 4 gallons per hour; 5 gallon size capacity, about 6 gallons per hour.

Small size—3 gallons capacity.....\$50.00

Large size—5 gallons capacity..... 75.00

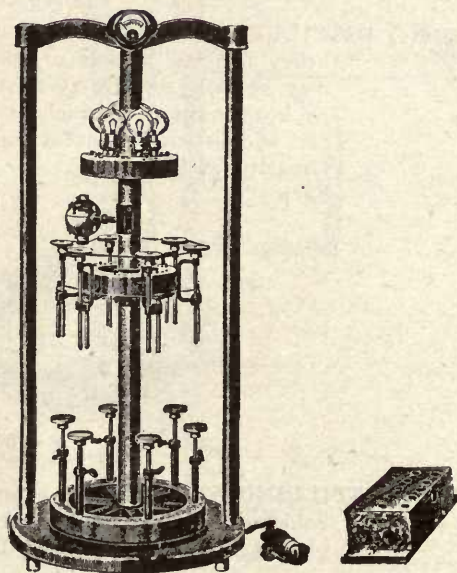
3815(c) STIRRER AND ELECTRO ANALYSIS APPARATUS—For the rapid determination of Copper, Tin, Lead, Zinc, etc.

The stand consists of three circular castings on an aluminum pipe and may be turned nearly 180° in either direction.

The upper casting carries 6 resistance lamps and a push button switch in series with each lamp.

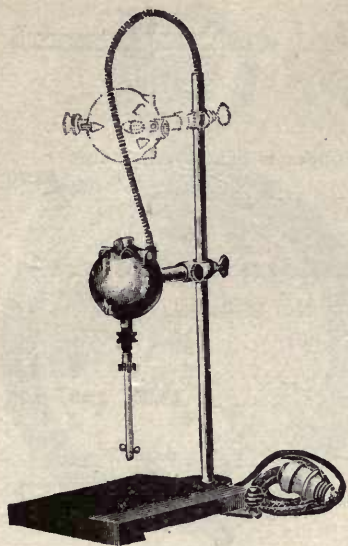
The center casting carries the electrode holders, a push button switch to short circuit the holders when not in use, and a switch to change the polarity of the electrodes. Each lamp on the upper casting is in parallel with the electrodes on the center casting in order to take up the current carried by the solution when the solution is lowered, so that the electrodes are out of contact with it. A motor on center support revolves the electrodes. The lower casting carries the beaker supports.

Price, complete, not including electrodes\$200.00



3815(c)

STIRRER, GRAMERCY ELECTRIC



3815(d)

This excellently designed apparatus will be found useful for a number of purposes besides general stirring. The motor is fitted with a pulley wheel, which can be brought to a vertical position by a turn of the adjustable extension clamp attaching the motor to the support and allowing the motor to be raised or lowered, as may be desired.

The removable attachment holding the stirring rod is provided with a union fitting, which firmly holds the stirrer and allows it to be quickly and easily removed. The Universal Motor, $\frac{1}{2}$ H. P., which can be operated on either D.C. or A.C., is fully enclosed with an aluminum cover to prevent dust or particles from getting to the working parts. It is attached to the support by means of an adjustable extension clamp. The heavy iron support, with base 16 cm. x 25 cm., is fitted with a hollow upright through which passes the wires from the rheostat to the motor, which, above the rod, are sheathed in flexible metallic tubing. A rheostat, having ten steps, is neatly fitted under the base of the support.

Price with support, as illustrated.....\$30.00



3816



3818



3820

- 3816 STOPCOCKS, brass, double ends, for tubing connection; bore, $\frac{1}{8}$ in., 65c;
 $\frac{1}{4}$ inch\$1.00
 3818 STOPCOCKS, brass, with male screw and end for tubing; bore $\frac{1}{8}$ in.,
 75c; bore $\frac{1}{4}$ inch..... 1.00
 3820 STOPCOCKS, brass, with female screw and end for tubing; bore $\frac{1}{8}$ in.,
 75c; bore $\frac{1}{4}$ inch..... 1.00



3822



3824



3826

- 3822 STOPCOCKS, brass, with double male screws; bore $\frac{1}{8}$ in., 75c; bore $\frac{1}{4}$ in..\$1.00
 3824 STOPCOCKS, brass, with double female screws; bore $\frac{1}{8}$ in., 75c; bore $\frac{1}{4}$ in. 1.00
 3826 STOPCOCKS, brass, with male and female screws; bore $\frac{1}{8}$ in., 75c; bore
 $\frac{1}{4}$ inch 1.00



3827

- 3827 STOPCOCKS, brass, with male screw of $\frac{3}{8}$ -inch bore, the nipple is designed
 to accommodate rubber tubing from $\frac{1}{4}$ to $\frac{1}{2}$ -inch inside diameter....\$0.90

ACID PROOF CHEMICAL STONEWARE, including Acid Elevators (Montejus)—automatic and non-automatic—Carboy Stoppers, Check Valves, Chlorine Generators, Cocks of all kinds, Coils, Crystallizing Vessels, Dampers, Decanting Pots, Dipping Baskets, Exhausters, Filters, Foot Valves, Funnels, Injectors, Jars, Kettles, Laboratory Sinks, Lanterns, Mariotte Bottles, Mortars, Nitrating Vessels, Percolators, Photographic Tanks, Pipes of all kinds, Pots, Pumps—Plunger and Centrifugal—Pumps for gases, Receivers, Retorts, Safety Valves, Stills, Stirrers, Storage Vessels, Subliming Dishes, Suction Filters, Siphons, Tanks, Tourills, Towers, Vacuum Kettles, Valves. Prices on application.



3832



3834



3836

3828 STOPCOCKS, glass, capillary. The bore of the stopper is exactly the same as the bore of the tubes, each.....\$2.70

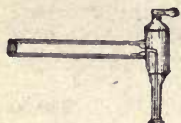
3832—STOPCOCKS, glass, Geissler's.

Bore, m.m.	1	2	3	4	5	6	8	10
Each	\$1.50	1.75	2.00	2.40	2.75	3.75	5.00	7.50

3834 STOPCOCKS, glass, Geissler's, bent, same price as No. 3832.

3836 STOPCOCKS, glass, Geissler's 3-ways, new style.

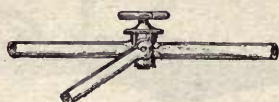
Bore, m.m.	1	2	3
Each	\$2.00	2.50	3.00



3838



3840



3842

3838 STOPCOCKS Glass, Fresenius, right angle. Bore 1 m.m.....\$1.75

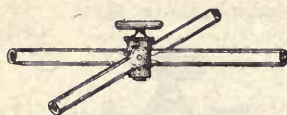
3839 STOPCOCKS Glass, Fresenius, right angle. Bore 2 m.m..... 2.00

3840 STOPCOCKS, Glass, Geissler's, angle of 45 degrees. Bore 2 m.m..... 2.50

3842 STOPCOCKS, glass, Geissler's, 3 ways.

Bore, m.m.....	1	2	3	5
Each	\$2.00	2.50	3.00	4.50

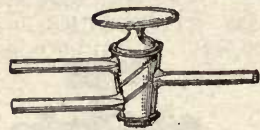
3843 STOPCOCKS, Glass capillary, three-way\$4.00



3844



3846



3848

3844 STOPCOCKS, Glass, Geissler's, 4 ways.

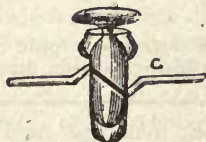
Bore, m.m.	1	2	3	5
Each	\$3.00	3.50	4.50	7.00

3846 STOPCOCKS, Glass, Geissler's, latest form, with plug bored at an angle, bore 2 m.m.\$2.50

3848 STOPCOCKS, Glass, Geissler's latest form 3 ways, with three side tubes; the stopper has two slanting bores.

Bore, m.m.	2	4
Each	\$3.00	5.00

NOTE—Any of the above Glass Stopcocks can be used on any form of Burettes, etc., made to order.



3849

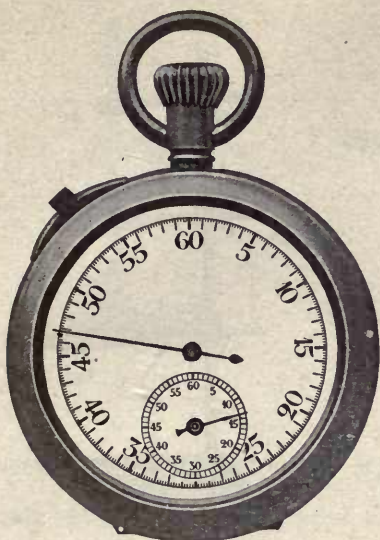


3851

3849 STOPCOCKS, Geissler's Mercury Seal Stopcock, very accurately ground, same as used on Vacuum Pumps where a very tight joint is necessary.

Size, m.m.	2	4
Price	\$4.00	5.50

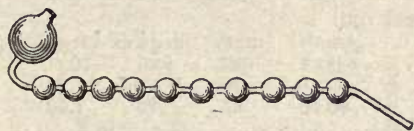
3851 STOPCOCKS, Hard Rubber, with both ends for rubber tubing connection, bore $\frac{1}{8}$ -inch, for use with H_2S \$0.75



3855

3853 STOPWATCH, fifth second, 30 minute register, start, stop and fly back from crown, in nickel case.....\$7.50

6788 STOPWATCH, Antimagnetic, absolutely guaranteed, a reliable watch for laboratory purpose, in nickel case\$14.00



3857

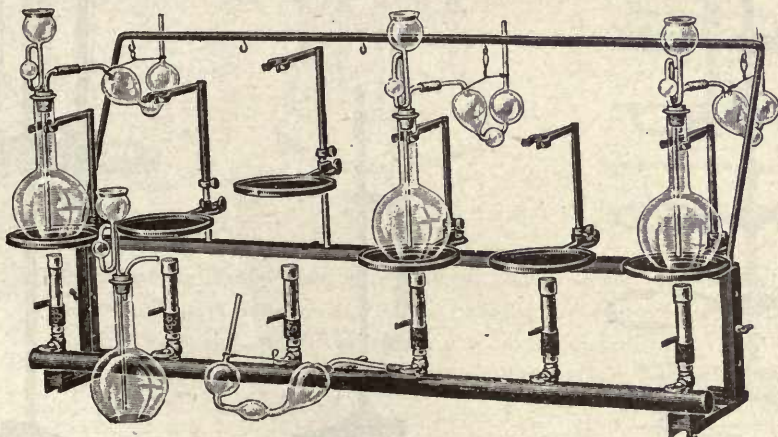
3857 SULPHUR APPARATUS, Meyer's, modified by Brady with 10 bulbs each $\frac{1}{4}$ inches diameter\$1.75

3857(a) SULPHUR APPARATUS, Meyer's, for determination of sulphur in iron and steel by bromine; with stop-cock and 9 bulbs..... 3.75

3857(b) SULPHUR APPARATUS, same as above, without stop-cock..... 1.75

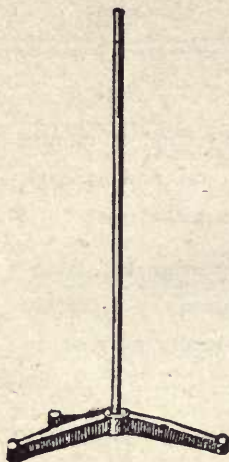


3857(a)



3857(c)

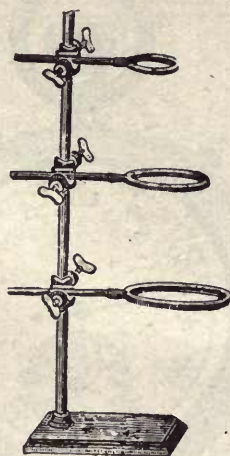
3857(c) SULPHUR RACK, as used by the Illinois Steel Co. Consists of a support for glass ware combined with a battery of special high temperature burners supplied with individual stop-cocks and hot plates, all parts adjustable. Its rugged construction and open design tend to convenience of operation and facilitate the cleaning up of acid and other dirt which always accumulates about this class of apparatus. Will not warp. May be supplied with rack to hold absorption tubes instead of bulbs\$30.00



3858



3860



3861

3858 SUPPORTS, Iron, triangular base and steel rod.

Size	small
Height of rod, inches	18
Each	\$0.45

med.	large	ex-large
20	26	36
.60	.90	1.65

3860 SUPPORTS, Iron, rectangular base and steel rod.

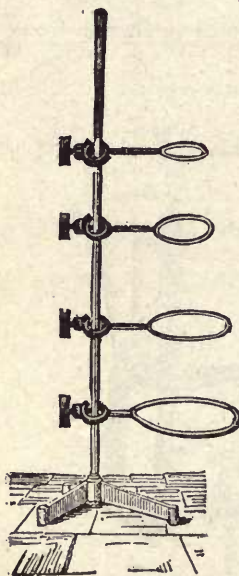
Size	small
Size of base, inches.....	6 $\frac{3}{4}$ x4
Height of rod, inches	18
Each	\$0.40

med.	large	ex-large
8x5	9x6	10x7
20	26	36
.65	.75	1.40

3861 SUPPORTS, Iron retort stands, rectangular base, with rings. No. 3740.

Size	small
Size of bases, inches.....	6 $\frac{3}{4}$ x4
Number of rings	2
Each	\$0.80

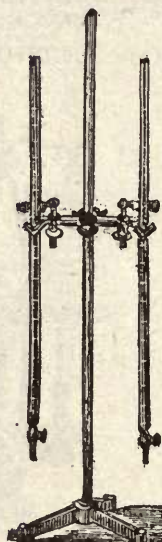
med.	large	ex-large
8x5	9x6	10x7
3	4	5
1.00	1.50	2.20



3861(a)



3862



3864

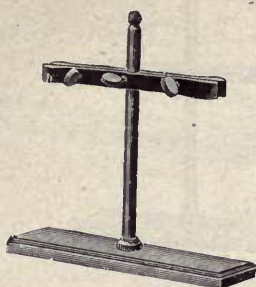
3861(a) SUPPORTS, Iron extension rings with clamps, with triangular base and rod, medium size. Complete with three rings and holders.....\$2.25**3862 SUPPORTS, Burette, iron, triangular base and clamp. No. 2288.**

Number of clamps with stand.....	1	2	3
With clamps of iron, each	\$1.00	1.50	2.00

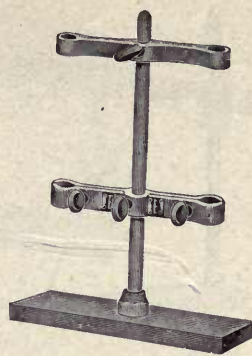
3863 SUPPORTS, as above, with clamps of brass, each.....\$1.50 2.25 3.25**3864 SUPPORTS, for 2 burettes, iron, with 1 double Hofmann clamp.....\$2.25**



3866



3868

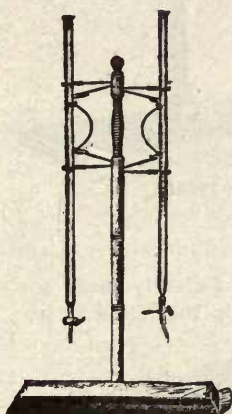


3869

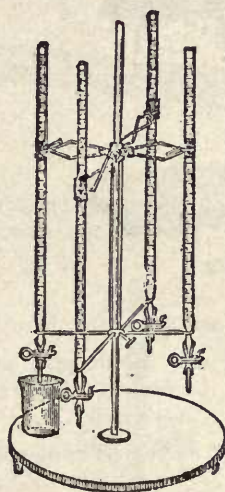
3866 SUPPORT, for 1 burette of wood, corklined.....\$1.10

3868 SUPPORT, for 2 burettes, of wood, corklined..... 1.25

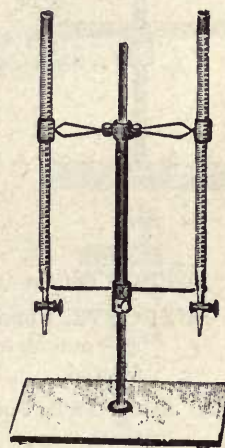
3869 SUPPORT, Burette, as above, with extra arms to keep the burettes steady.. 1.50



3872



3876



3877

3870 SUPPORT, Burette, Chaddock's, wire clamps, rubber lined, for holding the burette, which is readily placed in position or removed by simply springing back the wire. The rod and base are of polished wood, fastened on to the base is a piece of milk white glass. A very desirable support; for 1 burette\$1.75

3872 SUPPORT, Burette, Chaddock's, as above, but for 2 burettes..... 3.00

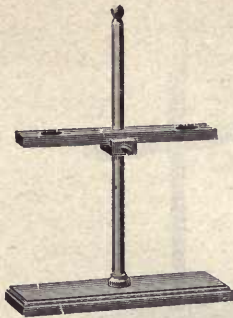
3874 SUPPORTS, for 2 burettes, solid porcelain base, revolving clamps; a very desirable and elegant support..... 5.50

3876 SUPPORTS, for 4 burettes 7.50

3877 SUPPORTS, Burette, porcelain base, brass rod, revolving clamps, for 2 burettes 6.00



3886

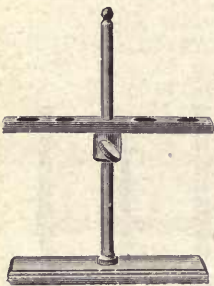


3888

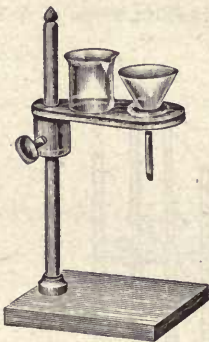


3890

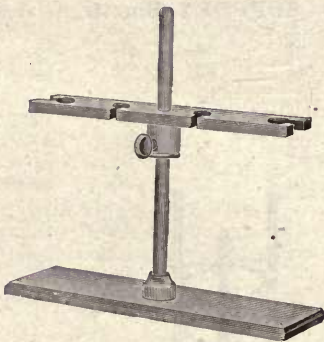
- 3886 SUPPORTS, for funnels, wood, with 1 arm.....\$0.85
3888 SUPPORTS, for funnels, wood, with 2 arms..... 1.25
3890 SUPPORTS, for funnels, wood, with 1 arm for 2 funnels..... .80



3892

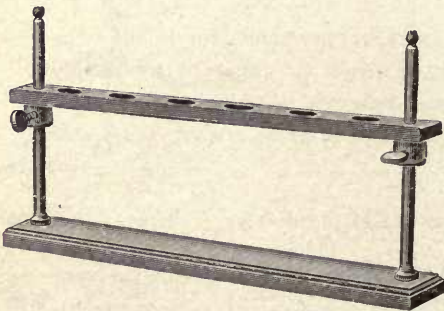


3893

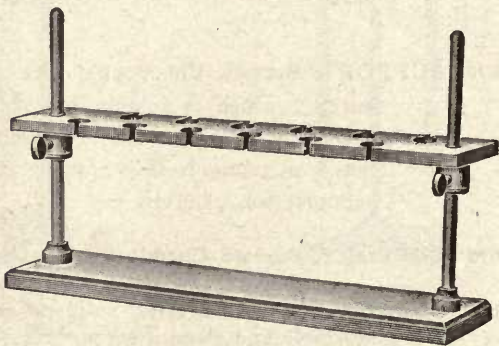


3893(a)

- 3892 SUPPORTS, for funnels, wood, with one double arm, for 4 funnels.....\$1.25
3893 SUPPORTS, Funnel, wood, with single arm which is sufficiently large to accommodate, besides the funnel, a beaker containing the liquid to be filtered 1.25
3893(a) SUPPORT, Funnel, wood, improved double arm for 4 funnels..... 1.25

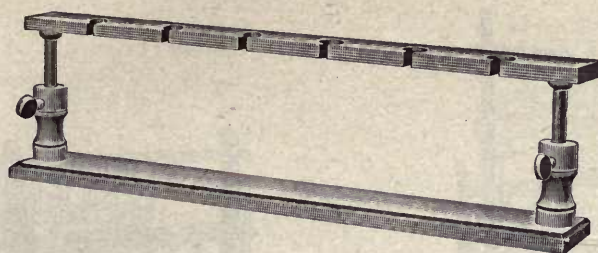


3894



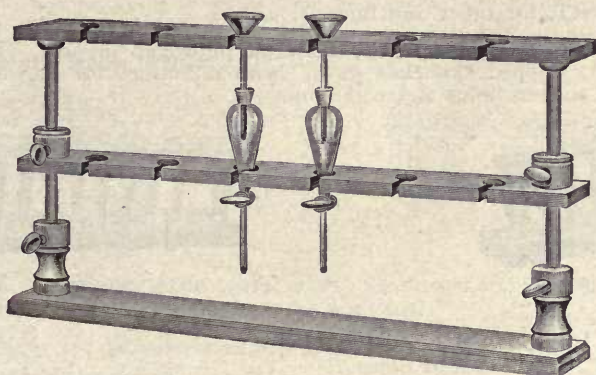
3895

- 3894 SUPPORT, for funnels, height adjustable, wood, 6 funnels in one line.....\$4.00
3895 SUPPORT, Funnel, wood, for 12 funnels in two rows..... 5.00



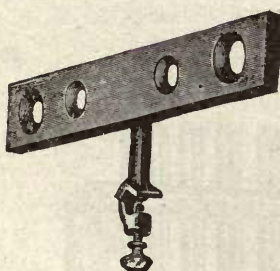
3895(a)

3895(a) **SUPPORT, Funnel, wood, improved pattern, height adjustable, for 6 funnels in a row**\$4.00



3895(b)

3895(b) **SUPPORT, Separatory Funnel, as described by Dr. A. E. Leach in his work on Food Inspection and Analysis**\$7.50



3895(c)



3896



3897



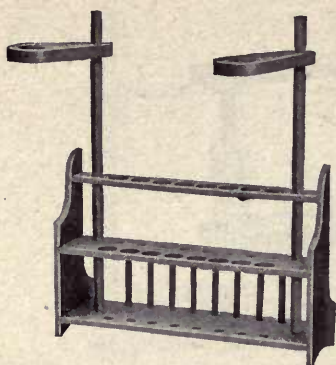
3897(a)

3895(c) **SUPPORT, Funnel holder, of hardwood, with iron clamp, for attaching to supports (base and rod), with 4 bevelled holes for 4 funnels**.....\$0.75

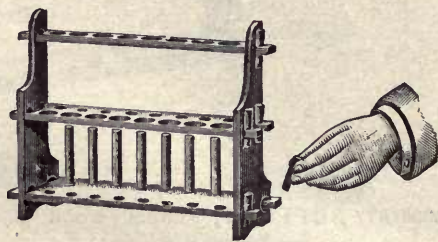
3896 **SUPPORT, for pipettes, wood, revolving, for 12 pipettes**..... 3.50

3897 **SUPPORTS, Table, polished wood, wooden top and rod, height adjustable.**
 Height, when closed, inches..... 9 12
 Each\$1.50 1.60

3897(a) **SUPPORT, Table, of cast iron, japanned, 5 inches diameter, with clamp for use on Retort Stand. Can also be used as a hot plate**.....\$0.50



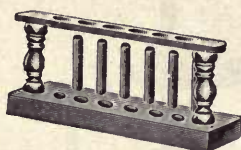
3897(b)



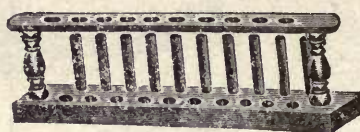
3897(c)

3897(b) SUPPORT, for tubes and funnels.....\$1.00

3897(c) SUPPORT, Test tube, a very desirable improved support, without glued joints, shipped "knocked down" with directions for putting together, with sixteen holes and eight pins..... .75



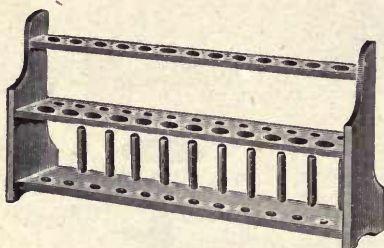
3898



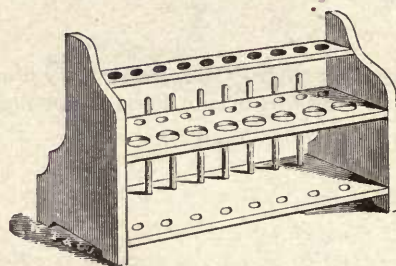
3900

3898 SUPPORT, for Test Tube, 6 holes.....\$0.45

3900 SUPPORT, Test tube, 10 holes..... .50



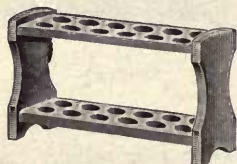
3901



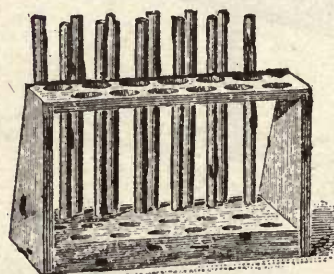
3904

3901 SUPPORT, Test tube, wood, for 25 tubes with 10 drying pins.....\$0.85

3904 SUPPORT, Test tube, 16 holes and pins..... .75



3906



3908

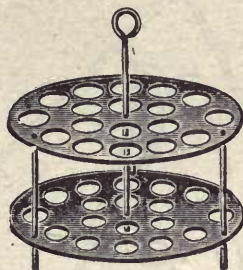
3906 SUPPORT, Test tube, wood, for 12 large tubes in 2 rows, size of holes $\frac{7}{8}$ inch\$0.50

3907 SUPPORT, Test tube, as above, for 12 large tubes in 2 rows, holes $1\frac{1}{8}$ inch. .75

3908. SUPPORT, Test tube, wood, for 12 large tubes, $1\frac{1}{8}$ inch holes in 2 rows, with 12 drying pins..... 1.25



3910

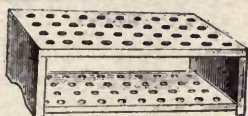


3911

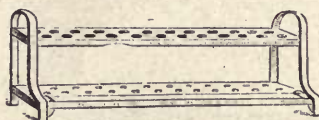
3910 SUPPORT, Test tube, wood, for drying test tubes.

With pins	25	50
Each	\$1.00	1.75

3911 SUPPORT, Test tube, of zinc, round form, for 18 tubes, useful for heating tubes in a water bath.....\$0.75



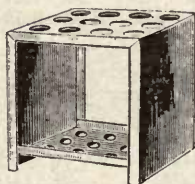
3913



3913(a)

3913 SUPPORT, for Wassermann tubes, made of polished copper, will stand sterilization, for 40 tubes 3x $\frac{3}{8}$ inches in 4 rows.....\$2.50

3913(a) SUPPORT, for Wassermann tubes, polished copper, 13 inches long, for 24 tubes 3x $\frac{3}{8}$ inches..... 2.00



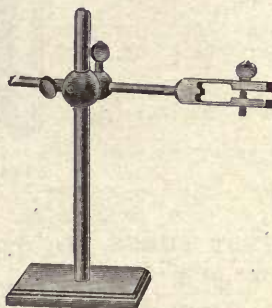
3913(b)

3913(b) SUPPORT, Test tube, made of copper, with $\frac{3}{4}$ inch holes for twelve test tubes. The lower shelf on which the test tube rest is flanged up, forming a pan to receive the contents of the tubes in case any of them should break.

Large, 3 by 4 by 4 $\frac{1}{2}$ inches high.....	\$1.00
Small, 3 by 4 by 2 $\frac{1}{2}$ inches high.....	.75



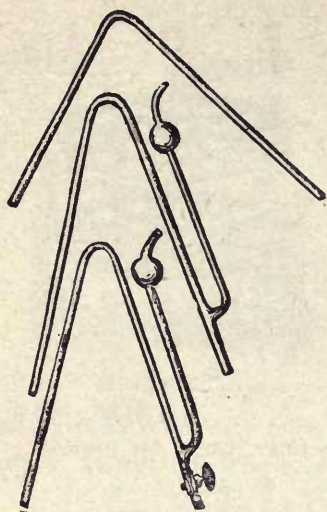
3914



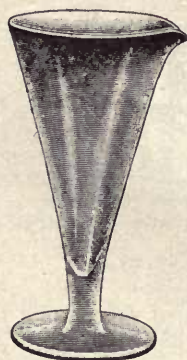
3918

3914 SUPPORTS, Universal; Schellbach's.....\$3.00

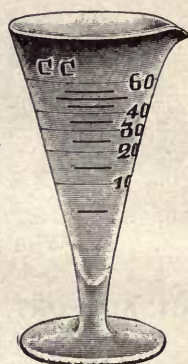
3918 SUPPORTS, with 22-inch extension..... 3.00



3922-3926



3928



3929

3922 SYPHONS, Glass, plain.

Length of limb, inches.....	8	12	15	18	24	30
Each	\$0.15	.20	.25	.30	.40	.50

3924 SYPHONS, Glass, with suction tube.

Length of limb, inches.....	8	12	15	18	24	30
Each	\$0.25	.30	.40	.70	1.00	

3926 SYPHONS, Glass, with suction tube and stopcock.

Length of limb, inches.....	8	12	15	18	24	30
Each	\$1.75	2.00	2.50	3.00	3.50	4.00

3928 TEST GLASSES, Conical, with lip, for urine, etc.

Capacity, ounces	1	2	4	6	8	
Each	\$0.15	.20	.25	.30	.35	

3929 TEST GLASSES, as above, graduated.

Capacity	30 cc	60 cc	100 cc	200 cc		
Each	\$0.30	.35	.40	.50		

TEST TUBES



3940



3942

3940 TEST TUBES, best American glass, even thickness, well annealed, free from lead.

Size	3x3/8	4x1/2	5x1/2	5x5/8	6x1/2	6x5/8	6x3/4	7x7/8	8x1	9x1	10x1	12x1
Dozen	\$0.20	.25	.30	.30	.30	.35	.40	.50	.60	1.00	1.25	2.00
Gross	1.75	2.50	2.75	3.00	3.50	3.75	4.00	5.00	6.50	10.00	12.00	20.00

3942 TEST TUBE, graduated.

Capacity	5 cc. 1/10	10 cc. 1/10	15 cc. 1/10	20 cc. 1/10	25 cc. 1/10	
Each	\$0.75	.85	1.00	1.15	1.25	



3944



3946



3948



3949 (a)

3943 TEST TUBES, Bacteriological, so-called Board of Health test tubes, of best American glass, of rather thick wall, without flange.

Size, inches	5x $\frac{1}{2}$	5x $\frac{5}{8}$	6x $\frac{1}{2}$	6x $\frac{5}{8}$	6x $\frac{3}{4}$	7x $\frac{7}{8}$
Per dozen	\$0.30	.35	.35	.40	.45	.50
Per gross	3.00	3.50	3.50	3.75	4.60	5.50

3944 TEST TUBE, with side neck.

Length, inches	5	6	8	10
Dozen	\$0.60	.75	1.00	1.50

3946 TEST TUBES, on foot, plain.

Height, inches	4	5	6	8	10
Dozen	\$0.75	.85	1.00	1.50	2.00

3948 TEST TUBES, on foot, graduated.

Capacity, c.c.	5	10	15	25
Grad. c.c.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Each	\$0.75	.80	.85	1.50

3949 TEST TUBES, Fused Silica, heavy wall with flared tops.

Size, inside, inches	4x $\frac{1}{2}$	5x $\frac{5}{8}$	6x $\frac{3}{4}$	7x $\frac{7}{8}$
Each	\$0.85	1.20	1.75	2.25

3949 (a) TEST TUBES, Titre Tubes, for determining the solidification point of fats, etc.

Size, inches	3x $\frac{3}{4}$	3x1	4x $\frac{3}{4}$	4x1
Per dozen	\$0.30	.40	.40	.50
Per gross	3.00	4.00	4.00	5.00

THERMOMETERS



3950

THERMOMETER, chemical, scale engraved on the stem, with white back, very exact; each in pasteboard case

3950 THERMOMETER , Grad. up to C° in 1°	100	150	200	250	360
Each	\$1.20	1.30	1.40	1.50	2.00

3952 THERMOMETER , Grad. up to F° in 1°	212	400	600
Each	\$1.20	1.40	1.75

3954 THERMOMETER, Chemical, milk glass scale, enclosed in glass tube; each in pasteboard case.

Grad up to C° in 1°	100	150	200	250	360
Each	\$2.50	3.00	3.50	3.75	4.00

3956 THERMOMETER , Grad. up to F° in 1°	212	400	600
Each	\$2.50	3.00	4.00

3958 THERMOMETER, Chemical, with paper scale, enclosed in glass tube; each in pasteboard case.

Grad. up to C° in 1°	100	150	200	250	360
Each	\$2.00	2.50	2.75	2.75	3.00

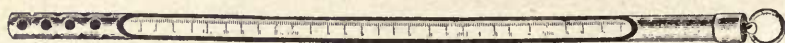
3960 THERMOMETER , Grad. up to F° in 1°	212	400	600
Each	\$2.00	2.50	3.00

- 3962 THERMOMETERS**, chemical, with two scales engraved on the stem in 1°.
 Registering 100° C. and 212° F..... \$2.50
 Registering 200° C. and 400° F..... 3.00
 Registering 300° C. and 600° F..... 4.00
- 3964 THERMOMETERS**, chemical; filled with nitrogen, to prevent the separation of the Mercury; engraved on the stem; graduation, 0° to 400°
 Celsius in 1-1° 3.00
 Graduation, 0° to 750° Fahrenheit in 1-1°..... 3.00
- 3966 THERMOMETERS**, chemical; engraved on stem in fractional degrees.
 Grad. from 0° to 50° C. in 1-10° 3.00
 Grad. from 0° to 100° C. in 1-5° 3.00
 Grad from 0° to 100° C. in 1-10° 4.00
 Grad. from 0° to 200° C. in 1-5° 4.50
 Grad. from 100° to 200° C. in 1-5° 3.00
 Grad. from 100° to 200° C. in 1-10° 4.00



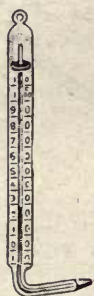
3967

- 3967 THERMOMETERS**, Beckmann's, for molecular weight determinations, for either boiling or freezing point method, range of scale, about 6°C graduated into 1-100°C..... 25.00
- 3967 (a) THERMOMETERS**, Beckmann's, for calorimetric determinations, range of scale, about 12°C graduated into 1-50°C..... 25.00
- 3969 THERMOMETERS**, Cold Test, graduated on stem.
 Graduated from -40 to +100F., length, 30 ctm. graduated in 1°..... 2.50
 Graduated from -40 to +40C., length, 25 ctm. graduated in 1°..... 2.00
- 3971 THERMOMETERS**, Gas Calorimeter, with scale engraved on stem, +32 to 115°F. in 1/5°F..... 5.00
- 3973 THERMOMETERS**, Calorimeter work with certificate, graduated from 15° to 25° in 1-1000 degrees C., with scale on stem..... 40.00
- 3975 THERMOMETERS**, "Titre Test," as adopted by the Assn. of Official Agricultural Chemists, graduated from 10 to 60°C. in 1-10 degrees with zero mark and auxiliary reservoir at upper end. Also one between the zero mark and the 10° mark, length about 37 ctm. and 6 mm. diam. in case..... 8.00
- 3997 THERMOMETERS**, "Titre Test." Same as above with U. S. Government certificate 10.00



3977(a)

- 3977 (a) THERMOMETER**, Armored, with graduations engraved on stem, with white background. The "armor" is made of one piece of seamless drawn steel tube
 Length in inches 14 16 16 16 16
 Graduated to F..... 400 600 750 900 1000
 Each \$5.25 6.00 7.50 9.00 10.50
- 3977 (b) THERMOMETERS**, extra thermometers for above. Each..... \$2.75 3.50 5.00 6.50 8.00
- 3977 (c) THERMOMETERS**, Asphalt Testing, engraved on stem, in nickel plated brass armor. Made exceptionally strong to meet the requirements of use.
 Length, inches 6 16
 Graduated from 200 to 400F 100 to 600F
 Each \$4.50 6.00
- 3977 (d) THERMOMETERS**, extra thermometers for above.. 2.25 3.75



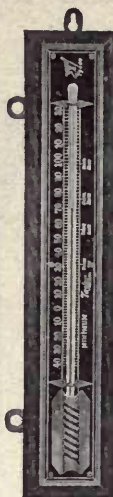
3978



3982



3986



3990



3991

THERMOMETERS, Chemical, bent at right angles; scale enclosed in glass tube.

- 3978 THERMOMETERS, graduation up to 100° C, each.....\$ 3.00
 3980 THERMOMETERS, graduation up to 212° F, each..... 3.00

3982 THERMOMETERS, in Japanned tin frames.

Length, inches 8 10 12
 Each \$0.50 .75 1.00

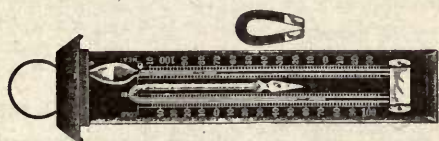
- 3986 THERMOMETERS, in wooden frame, with handle, length 10 inches..... 1.50

- 3988 THERMOMETER, Maximum, self registering, mounted on polished wood frame, 12 inches long. Grad.—40—120° F..... 4.00

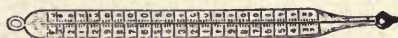
- 3989 THERMOMETERS, Maximum, graduated from 0 to 100° C, about 8 inches long 4.00

- 3990 THERMOMETERS, Minimum, self registering, mounted on polished wood frame, 12 inches long. Grad.—40—120° F..... 4.00

- 3991 THERMOMETERS, Maximum and Minimum, each thermometer mounted on separate plate with thumb screw for resetting, mounted on polished wood frame 7.50



3992



3995

- 3992 THERMOMETERS, Maximum and Minimum Six's, in japanned tin case, 10 inches long \$6.00

- 3994 THERMOMETERS, Pocket, porcelain scale, hard rubber case, 220° F, length 6 inches 2.00

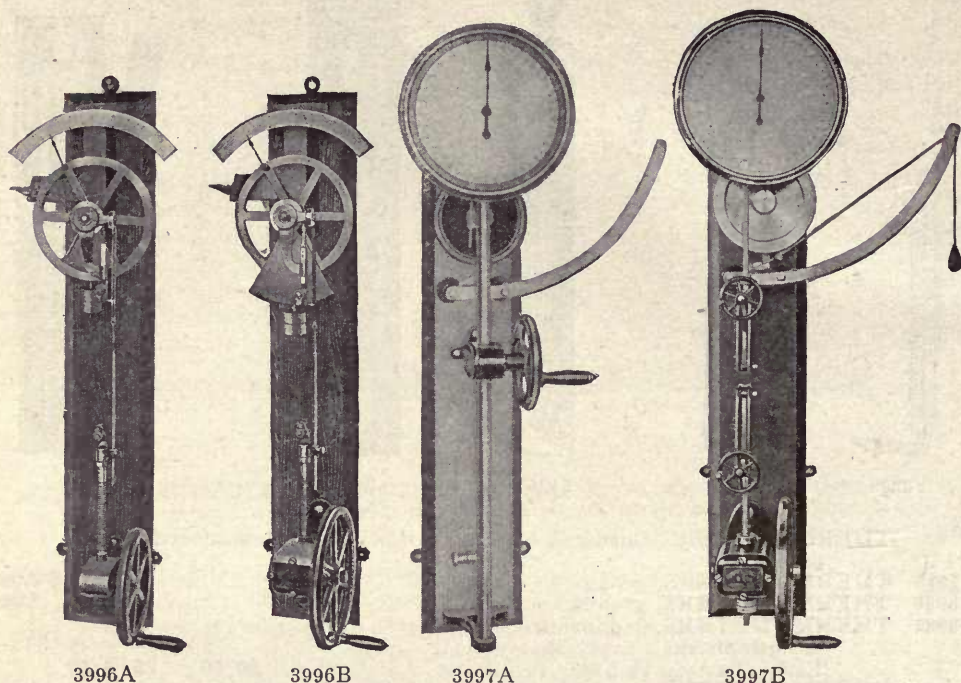
- 3995 THERMOMETER, Large Diameter, 20-22 mm., with paper scale enclosed in tube.

Graduated to 100° C 200° C 130° F 220° F
 Length about, ctm. 30 35 25 30
 Each \$1.50 2.00 1.50 2.00

SPECIAL THERMOMETERS MADE TO ORDER IN OUR GLASS-BLOWING DEPARTMENT

Any kind of paper scale or engraved stem thermometer can be promptly made by our experts. We are also equipped to manufacture industrial thermometers of any design in large quantities at very favorable prices.

TEXTILE AND FABRIC TESTERS



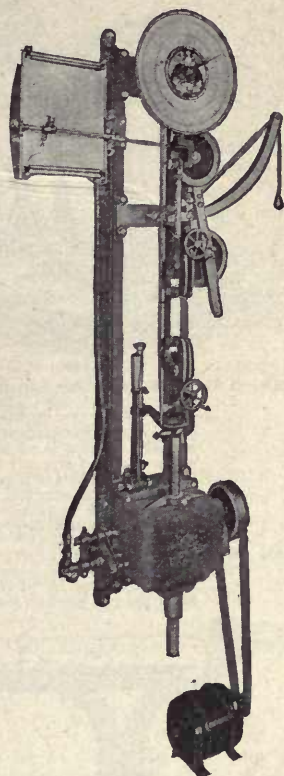
- 3996A SINGLE STRAND TESTERS.** Hand operated. In the use of some materials it is advisable to know the strength of the individual strand. The two machines shown above are made to be driven by hand. The recording head is built as a balance wheel rotating upon two large self-aligning ball-bearings in such a manner as to be extremely sensitive.
- No. 3996A. Capacity—10 pounds by ounces.
- No. 3996B. Capacity—50 pounds by $\frac{1}{4}$ pounds.

- 3997A. YARN TESTER.** Hand operated. This machine is a development of the old English yarn tester. When a sample has been placed upon the yarn hooks the hand wheel is rotated until the break occurs. This strain causes the weight to swing outward away from its vertical position and the pawl on the lever below the weight holds it in this position until reset by the operator. Also furnished in power driven types. Capacity up to 250 pounds.

- 3997B CLOTH TESTER.** Hand operated. Produced to satisfy the demand for a quickly and easily operated cloth tester. Capable of a great range of work. Operated on the principle applying to the above yarn tester. Also furnished power operated.

All of the textile testers listed above require the use of specially designed clamps. We are prepared to furnish clamps for any of the testers as well as any special clamps which might be necessary for a particular test. All testers and equipment are made according to U. S. Standards and are interchangeable. Fully guaranteed for accuracy, design, material and workmanship.

COMBINATION POWER YARN AND CLOTH TESTER



3997C This tester is a combination of the machines listed on the previous page. The addition of the automatic recorder has greatly enhanced the value of the tester. By the use of the recorder a chart line indicative of stretch and strength of the material is automatically recorded. The chart line shows the exact relation of stretch to the tensile strength, at every point of the test. Aeroplane wing fabric and other materials whose elongation under certain tension is of vital importance can be accurately tested only by this means.

Can be supplied in sizes of 50 to 600 pounds capacity depending upon the kind of material to be examined.

3997C

USEFUL TABLES FOR YARN TESTING

Weights Used for Cotton Yarn

24	grs. (Troy)	= 1 dwt. (Troy).
109	3-8 grs. or 4 dwts.	= 1-4 oz. (avoir'pois).
218	3-4 grs. or 9 dwts.	= 1-2 oz.
437	1-2 grs. or 18 dwts.	= 1 oz.
7000	grs. (Troy)	= 16 ozs. (avoir.) or 1 lb.

Measurements Used for Cotton Yarns

54 inches	= 1 thread or circumference of hank.
4,320 inches	= 80 threads = 120 yards = 1 lea.
30,240 inches	= 560 threads = 840 yards = 1 hank.
No. of yards	÷ 8.33 grains = counts of yarn.
1 bundle usually	= 10 lbs. weight.

Worsted Yarns

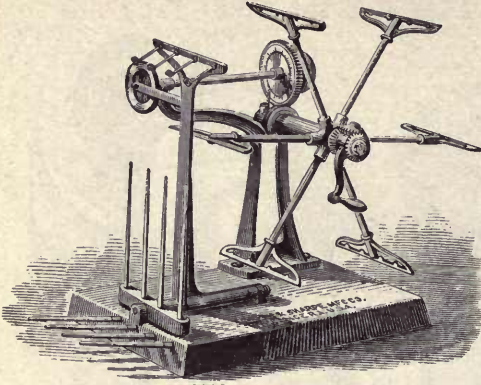
In its general features the system of numbering worsted yarns are similar to those of cotton. The worsted reel is two yards in circumference, and the table of measure is:—

2 yds.	= 1 thread.
80 yds.	= 40 threads = 1 lea or warp.
560 yds.	= 280 threads = 7 lea or warp = 1 hank.
	12 hanks = 1 doz.
	144 hanks = 12 doz. = 1 gross.

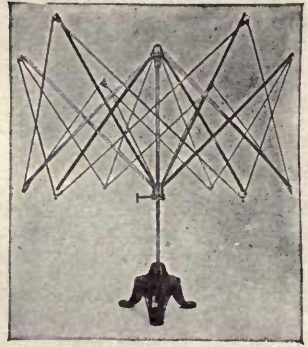
THE COUNTS OF YARN is the number of hanks required to weigh 1 lb. avoirdupois (or 7,000 grains Troy).

RULE FOR COUNTS—Reel off and weigh a suitable number of leas, add 3 cyphers to number of leas weighed, and divide by number of grains (Troy) the yarn weighs; the result gives the counts.

TEXTILE AND YARN INSPECTION



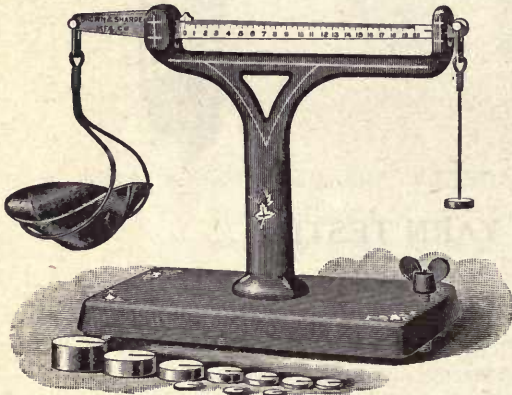
3998B



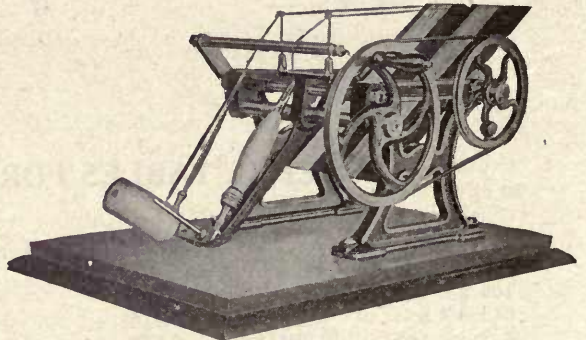
3998A

3998A YARN REEL. The reel is 54 inches, or one and a half yards, in circumference. The dial is graduated into 120 parts, indicating the number of yards reeled from each spindle. The yarn guides and spindles are kept in line with each other while feeding yarn upon the reel, which is very desirable when reeling fine yarns. The extra length of yarn guides is of use in increasing the friction upon the yarn by taking a half turn or more of yarn around them. The **automatic feed motion** lays the yarn flat upon the reel, thus securing accurate and uniform measurement, and consequently correct results as to stretch, strength and numbering. The bright spot on the web of the worm wheel is to show when the zero upon the dial approaches the index point, and thus assists the operator to stop promptly on the striking of the bell. Made in four or seven spindles.

3998B UMBRELLA REEL. This reel can be furnished with an adjustable clamp base for attaching to the edge of a table or shelf of any thickness. All parts are of metal and those coming in contact with the yarn are of solid brass and very smooth. It will hold skeins up to 72 inches and is invaluable for winding or examining yarns.



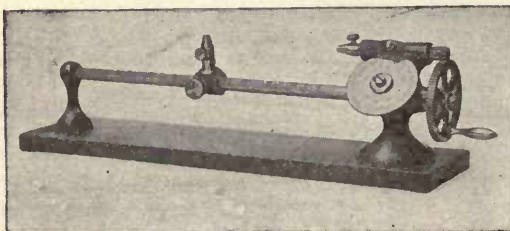
3999A



3999B

3999A ROVING OR YARN SCALES. This scale will weigh one pound by tenths of grains, or one seventy-thousandth part of one pound avoirdupois, rendering it especially well adapted for use in connection with Yarn Reels, for the numbering of yarn from the weight of hank, giving the weight in tenths of grains to compare with tables. It is also useful for the weighing of any small articles, coils, drugs, etc., for computation of large quantities, or for postal scales. The finished parts are nickel-plated and the stand japanned and ornamented. Ten balancing weights accompany each scale, viz.: one each of 20, 30, 50, 100, 200, 300, 500, 1000, 2000 and 3000 grains; the 20 grains on the beam being each divided into 10 parts. A level glass, to aid in adjustment, is set in the base.

3999B YARN INSPECTOR. For comparing and examining fine or coarse, cotton, woolen, silk, jute or other yarns. The cut shows a machine with inspection board in position. The yarn is wound from two cops or spools, and is laid evenly in parallel lines upon boards 17½ inches long by 8 inches wide. These boards are held in the machine by a spring clamp and are instantly interchangeable. Defects of any kind are readily exposed and samples may be held on file indefinitely for future reference and comparison. Twelve boards are furnished with each machine and extra boards will be supplied when desired. The machine is mounted upon a well-finished weathered oak base and designed with two solid iron side frames which support the mechanism. All metal parts are finished in black enamel and nickel plate, making this machine very attractive as well as serviceable.



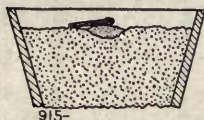
3999C

3999C TWIST COUNTER. This machine is designed for ascertaining the number of twists in yarn. Samples from one to ten or twenty inches can be clamped in the jaws provided for the purpose and by revolving the hand wheel until the yarn lays straight and the strands are parallel, the dial will accurately record the number of twists unraveled.

LABORATORY EXPERIMENTS WITH THE THERMIT PROCESS OF WELDING

The Thermit reaction is based on the chemical formula $\text{Fe}_2\text{O}_3 + 2\text{Al} = 2\text{Fe} + \text{Al}_2\text{O}_3$. In other words, iron oxide mixed with aluminum in approximately volumetric proportions and in the proper state of division will react in such a way that the oxygen leaves the iron oxide and combines with the metallic aluminum with which it forms an aluminum oxide or slag, setting free the iron.

The essential characteristic of the process is that when the Thermit mixture is ignited in one spot, the combustion so started continues throughout the entire mass without supply of heat or power from outside, and produces superheated liquid steel and superheated liquid slag. The temperature produced by the reaction attains about 4881° F. in less than thirty seconds. The liquid steel produced by the Thermit reaction represents one-half of the original Thermit by weight and one-third by volume.



In order to ignite Thermit, place on top of it a small heap of special ignition powder. Place on top of the powder a parlor match, so that the head of it will come about over the center of the powder, ignite the head of this match by applying another parlor match. Care must be taken as the reaction takes place instantaneously.

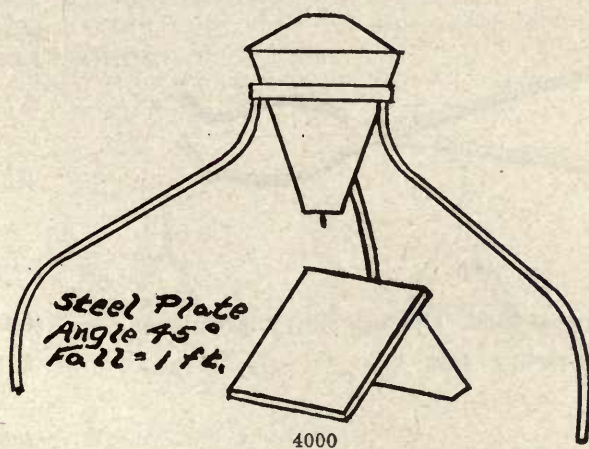
Welding a Small Boss to a Steel Plate by Igniting the Thermit Directly on the Plate



on the plate after taking care that the place selected is free from dirt or rust. Then fill the pouring cup about half full of Thermit and ignite as described above. The Thermit will burn down rapidly, giving off a bright light. It is advisable to protect the eyes with dark glasses. When the reaction has been well started, feed in the balance of the Thermit from the can in a steady stream so as to keep the reaction going until the entire welding portion has been consumed. About two minutes after the experiment has been made, tap the pouring cup gently with a hammer so as to break it up. It will be found that a lump of steel has been welded to the plate.

Materials required: A—3/16" steel plate. D—2 pouring cups. J—2 cans Thermit and can of powder.

The materials necessary are a steel plate, a refractory pouring cup, the necessary quantity of Thermit (welding portion No. 1 in can) and one-half teaspoonful of ignition powder. Place the plate on some dry sand and put one of the pouring cups anywhere



Burning a Hole Through a Plate

This experiment demonstrates the intense heat contained in the Thermit steel and incidentally teaches the proper manner of closing the outflow of the crucible (plugging the tap hole) and tapping the same when the reaction is completed.

The materials necessary for two operations are:

- B—A steel plate 3/8 in. thick, 9 in. square.
- F—1 tripod.
- O—2 welding portions (W. P. II).
- N—1 tapping spade.
- T—1 crucible (size 2-A).
- G—4 packages plugging material.
- J—1 bottle ignition powder.
- I—1 pair dark glasses.

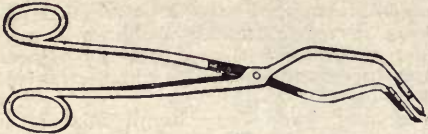
Price List of Materials for Experiments

A—3/10-in. steel plate 8x3 in., each...	\$0.30
B—3/8-in. steel plate 9x9 in., each...	1.00
C—1/4-in. steel plate 9x9 in., each...	1.55
D—Pouring cups, each...	.25
E—Crucible, No. 2-A, each...	8.00
F—Tripod, No. 1, each...	2.75
G—Plugging material, per pkg., each...	.20
H—Tapping spade, each...	.30
I—Dark glasses in case, each...	.35
J—Ignition powder, small bottle, ea.	.25
K—Ignition powder, large bottle, 5 oz.	.50
L—Fire-brick molds, each...	.50

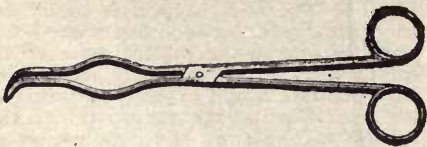
M—Bag of luting sand, each...	\$0.10
N—Welding Portion No. 1, each...	.30
O—Welding Portion No. 2, each...	3.00
P—Welding Portion No. 3, each...	3.20
Q—Welding Portion No. 4, each...	.60
R—1-in. Standard Pipes 6 in. long, per pair, each...	.30
S—1 in. Standard Mold, each...	2.00
T—1 crucible (2-S), each...	3.00
U—1 pair tongs, each...	2.00
V—1 pair clamps, each...	25.00

Write for Booklet of Experiments

TONGS

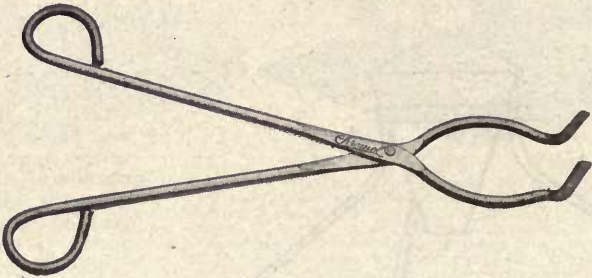


4016



4018

- 4016 TONGS, CRUCIBLE, Steel, single bent, 9 inches long.....\$0.35
- 4017 TONGS, CRUCIBLE, Steel, single bent, 9 inches long, nickel plated..... .50
- 4018 TONGS, CRUCIBLE, Steel, double bent, 9 inches long35
- 4022 TONGS, CRUCIBLE, Steel, double bent, 9 inches long, nickel plated..... .50
- 4023 TONGS, CRUCIBLE, Brass, single bent, 9 inches long..... .65
- 4023(a) TONGS, CRUCIBLE, Brass, single bent, 9 inches long, nickel plated... .90
- 4023(b) TONGS, CRUCIBLE, Brass, double bent, 9 inches long..... .65
- 4023(c) TONGS, CRUCIBLE, Brass, double bent, 9 inches long, nickel plated.. .90
- 4023(d) TONGS, CRUCIBLE, Steel, double bent, 12 inches long..... .50
- 4023(e) TONGS, CRUCIBLE, Steel, double bent, 12 inches long, nickel plated.. .75
- 4023(f) TONGS, CRUCIBLE, Brass, double bent, 12 inches long..... .75
- 4023(g) TONGS, CRUCIBLE, Brass, double bent, 12 inches long, nickel plated.. 1.00
- 4024 TONGS, CRUCIBLE, German Silver, double bent, 8 in. long..... 1.50
- 4026 TONGS, CRUCIBLE, Pure Wrought Nickel, 8 in. long..... 5.00
- 4028 TONGS, CRUCIBLE, Pure Wrought Nickel, provided with platinum tips, if required; price according to weight of platinum at market value.



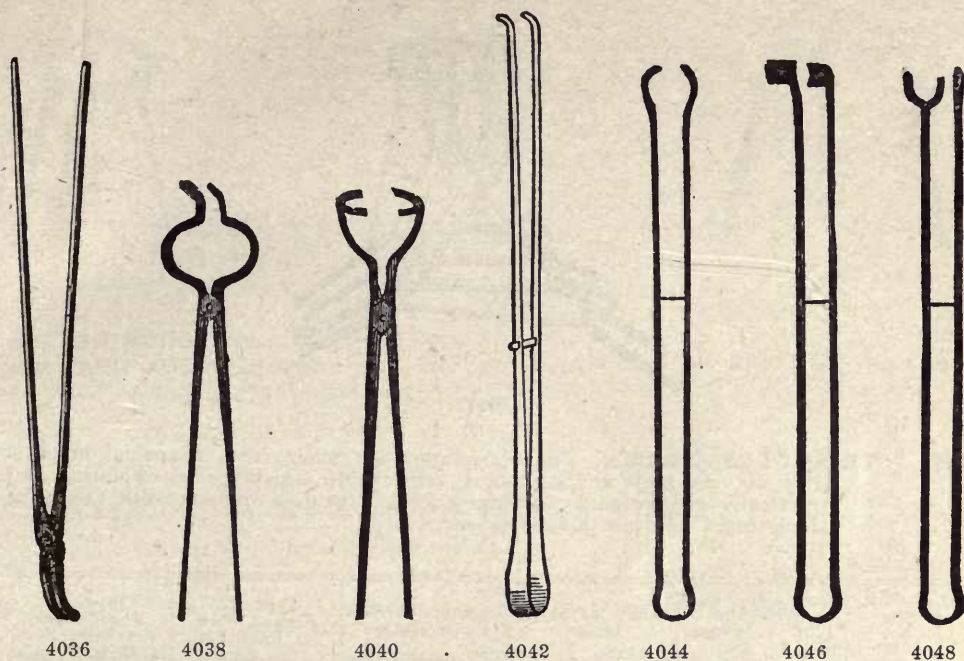
4029

- 4029 TONGS, CRUCIBLE, Chromel Solid. One size only, 9 inches long.....\$3.25
- 4031 TONGS, CRUCIBLE, with chromel tips. 2.75

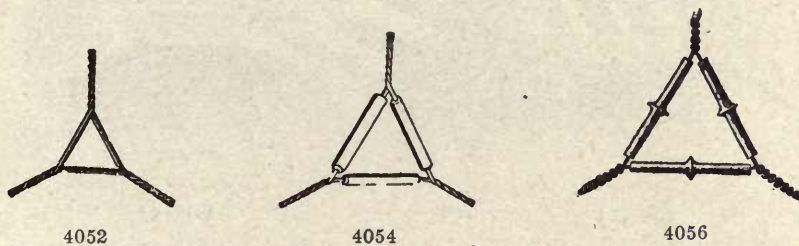


4032

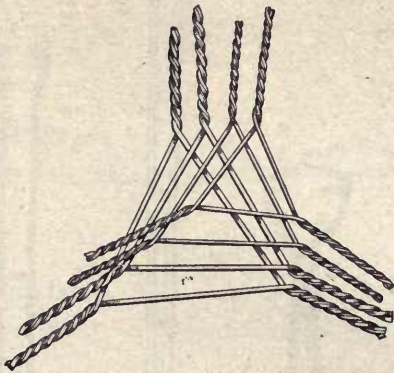
- 4032 TONGS, CRUCIBLE, Julian's Steel, nickel plated, bent with elbow, for lifting platinum crucibles from muffle furnace, 20 in. long.....\$2.00
- 4034 TONGS, CRUCIBLE, Malleable Iron, single bent.
 - Length, inches 12 17
 - Each\$0.50 .75



- 4036 TONGS, Crucible, steel, single bent.**
 Length, inches 18 24 32
 Each **\$1.25 1.50 2.00**
- 4038 TONGS, Crucible, steel, double bent, 30 in.....\$2.00**
- 4040 TONGS, Crucible, steel, for lifting vertically..... 2.50**
 NOTE—Larger sizes made to order. Mention size or number of black lead crucibles they are wanted for. Price according to size.
- 4042 TONGS, Cupel, steel, light with guide.**
 Length, inches 20 25 30
 Each **\$1.50 1.50 1.50**
- 4044 TONGS, Cupel, steel, with rounded ends.....\$1.25**
- 4046 TONGS, Cupel, steel, with flat rounded ends..... 1.25**
- 4048 TONGS, Scorifier, steel.**
 Length, inches 20 25 30 36
 Each **\$1.50 1.50 1.50 1.50**



- 4050 TRIANGLES, Glass.**
 Size, ctm. 6 8 9 10 12 15
 Dozen **\$1.00 1.10 1.25 1.40 1.50 2.00**
- 4052 TRIANGLES, Iron, plain, in three sizes, length of sides inside, 1½, 2 and 2½ inches.**
 Each **\$0.05**
- 4054 TRIANGLES; Iron, pipe stem covered.**
 Length of sides inside, inches..... 1½ 2 2½ 3 4
 Per dozen **\$0.90 .90 .95 1.25 2.00**
- 4056 TRIANGLES, Iron, covered with flanged pipe stems.**
 Length of sides inside, inches 2 2½ 3½
 Each **\$0.12 .12 .12**

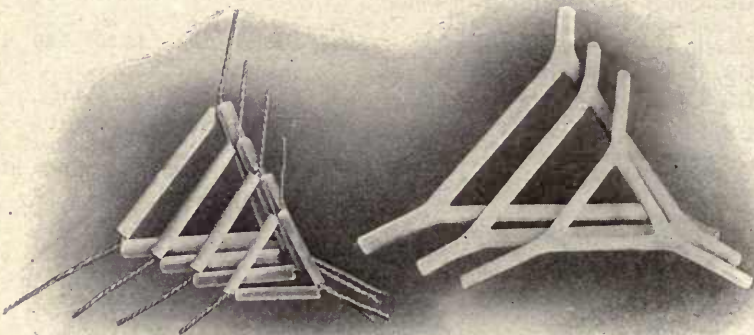


4057

4057 TRIANGLES, Hoskin's. These triangles are made from a special metallic alloy of very high melting point, remarkable resistance to oxidation and practically unaffected by ordinary acids; cost but one-sixteenth the price of platinum and last longer in service.

Size No.	Wire Size B. & S. Gauge	Length of Sides, Inches	Diam. of Inscribed Circle, Inches	Type XA Square Wire Net Price Each	Type XC Round Wire Net Price Each
1	15	1½	7⁄8	\$0.28	\$0.18
2	15	2	1⅜	.28	.18
3	14	2½	1⅞	.40	.25
4	14	3	1¾	.40	.25

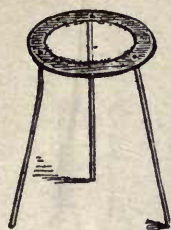
Type XA—Chromium-nickel alloy.
Type XC—Chromium-nickel-iron alloy.



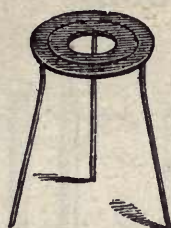
4057(a)

4057(c)

4057(a) TRIANGLES, Fused Silica tubes on iron wire.					
Length of side, inches.....	1½	2	2½	3	4
Each	\$0.13	.13	.16	.20	.30
4057(b) TRIANGLES, Fused Silica tubes on Nichrome wire.					
Length of side, inches.....	1½	2	2½	3	4
Each	\$0.25	.25	.35	.40	.50
4057(c) TRIANGLES, All Fused Silica.					
Length of side, inches.....	1½	2	2½	3	4
Each	\$0.75	.75	.90	1.00	1.25
4057(d) TRIANGLES, Pure nickel wire.					
Length of sides inside, ctm.....			4	6	8
Each			\$0.20	.25	.30
4057(e) TRIANGLES, Platinum, see Nos. 3646-7.					



4060



4062



4063

4058 TRIPODS, brass, for alcohol lamp.....\$0.60

4060 TRIPODS, of malleable iron, for Bunsen burners, single ring, much more serviceable than cast iron.

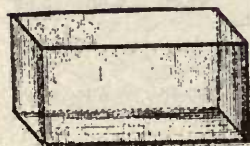
Diameter of ring, inches.....	5	6	8	10	12
Price, each.....	\$0.35	.40	.55	.75	1.00

4062 TRIPODS, of malleable iron, very durable, with rings.

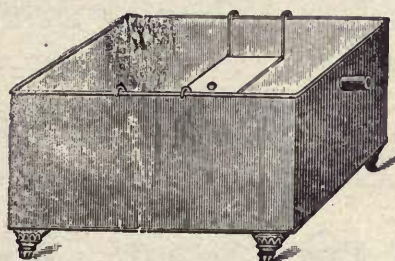
Diameter of largest ring, inches.....	5	6	8	10	12
Number of rings.....	2	3	4	5	6
Price, each.....	\$0.45	.60	.75	1.25	1.60

4063 TRIPODS, Iron, with easily removable legs, occupying the minimum of space when packed away, at the same time excel in strength and rigidity during use.

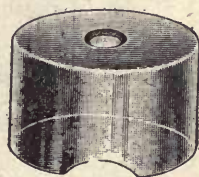
Ring outside, inches.....	5	6	7 3/8
Each	\$0.25	.35	.50



4064



4070



4071(a)

4064 TROUGHS, glass.

Length, inches.....	8	10	12 1/2	15
Width, inches.....	4	6	8	9 1/2
Height, inches.....	4	5	6	7
Each	\$3.00	3.75	6.50	10.00

4070 TROUGHS, Pneumatic, of zinc, with sliding shelf and overflow.

Size, inches	5x9x12	6x11x15	8x12x18
Each	\$1.60	2.20	2.40

4071 TROUGHS, Pneumatic, of tin, well japanned, with shelf and overflow, for students' use; size, 10x6x4 inch.....\$1.00

4071 (a) TROUGHS, Pneumatic, container supports, or so-called "Bee Hives." These are used as a support for the inverted receptacles.

Diameter, inches	3	4
Glass	\$0.40	.50
Zinc .....	.30	.35

TUBES



4072



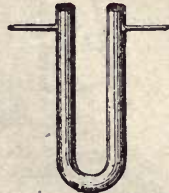
4074



4076



4078



4080

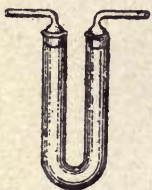


4082

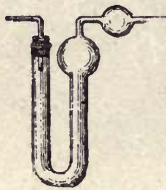


4084

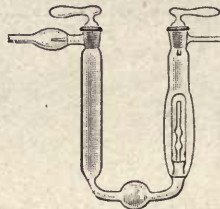
4072	TUBES,Chloride Calcium Tubes, with one bulb.					
	Length, inches.....	4	5	6	8	10
	Each	\$0.11	.12	.13	.15	.20
4074	TUBES,Calcium Tubes, with two bulbs.					
	Length, inches	4	5	6	8	
	Each	\$0.12	.13	.15	.20	
4076	TUBES, Calcium Tubes, with small inside tube to collect moisture in the bulb.					
	Length, inches		5	6	8	
	Each		\$0.25	.30	.35	
4078	TUBES, Chloride Calcium Tubes, plain U-shape.					
	Length, inches	3	4	5	6	7
	Each	\$0.12	.14	.18	.22	.25
					.30	.40
4080	TUBES, Calcium Tubes, U-shaped, with side tubes.					
	Length, inches		4	5	6	8
	Each		\$0.15	.20	.25	.35
4082	TUBES, Calcium Tubes, Schwartz', with side tubes and perforated glass stoppers.					
	Length, inches			4	5	6
	Each			\$2.00	2.50	3.00
4084	TUBES, Calcium Tubes, Pelligot's, U-shaped with 3 bulbs.					
	Length, inches			5	6	8
	Each			\$0.40	.50	.75



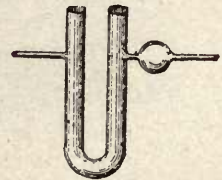
4086



4088



4090



4092

4086	TUBES, Calcium Tubes, with ground-in outlet tubes.				
	Length, inches	5	6		
	Each	\$1.50	2.00		
4088	TUBES, Chloride Calcium Tubes, Marchand's.				
	Length, inches	4	5	6	
	Each	\$0.30	.35	.40	
4090	TUBES, Calcium Tubes, Schmitz', 18 ctm. high				
		\$5.00			
4092	TUBES, Chloride Calcium Tubes, Volhard's.				
	Length, inches	5	6	8	
	Each	\$0.30	.35	.50	



4094

- 4094 TUBES, Combustion, porcelain, suitable for high temperature work. Specify glazing desired.

Size number.....	0	1	2	3	4	6
Outside diameter, mm.....	10	14	20	28	38	60
Inside diameter, mm.....	6	10	15	20	28	43
Length, mm.....	1000	1000	1000	1000	1000	1000
Each	\$5.60	5.60	7.00	8.40	11.20	14.00

If longer or shorter lengths are required add or subtract .01 of price for each centimeter.



4095

- 4095 TUBES, Pyrometer, porcelain, closed on one end, suitable for high temperature work. Specify glazing desired.

Outside diameter, mm.....	12,5	17
Inside diameter, mm.....	10,5	12
Length, mm.....	1000	1000
Each	\$7.00	7.70

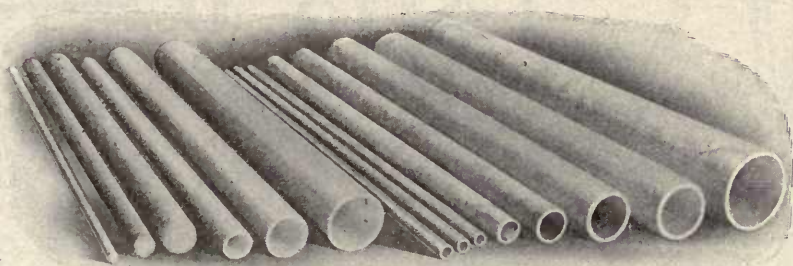
If longer or shorter lengths are required add or subtract .01 of price for each centimeter.



4097

- 4097 TUBE, Combustion, Vitrified Clay, Johnson's. For combustions in carbon determinations in steels and alloys. Tube only, 24 inches long. For use in electrically heated furnaces only.....\$5.00

- 4097(a) TUBE, Separate Tapered End, 4½ inches long with slip-over connection.. 2.00



4099

- 4099 TUBES, Fused Silica, very refractory, unaffected by rapid and extreme changes of temperature, in lengths up to 8 feet.

Bore, inches.....	⅛	1/8	¼	⅝	¾
Per foot.....	\$0.45	.75	.90	1.10	1.25
Bore, inches.....	½	5/8	¾	7/8	1
Per foot.....	\$1.50	1.75	2.10	2.30	2.50

Above can be closed at one end at slight additional cost.

- 4099(a) TUBES, Combustion, made of pure fused silica, with reduced end.

Length, inches.....	24	30	24	30	24	30
Bore, inches.....	¾	¼	7/8	7/8	1	1
Unglazed, net.....	\$5.20	6.25	5.60	6.75	6.25	7.50
Glazed, net.....	6.20	7.50	6.60	8.00	7.75	9.40

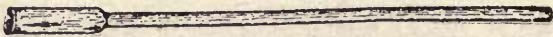


4099(b)

4099(b) TUBES, Alundum, suitable for use as electric furnaces, etc., where the resistor is to be covered with Alundum cement, the same as in case of cores or muffles.

Bore inches	Wall inches	Length 12 inches	Length 18 inches	Length 24 inches
1/2	1/8	\$2.00	\$3.25	\$4.50
5/8	1/8	2.00	3.25	4.50
3/4	1/8	2.00	3.25	4.50
1	1/8	2.00	3.25	4.50
1 1/8	1/8	2.10	3.40	4.70
1 1/4	1/8	2.20	3.50	4.95
1 1/2	1/4	2.40	3.90	5.40
1 3/4	1/4	2.60	4.25	5.85
2	3/8	2.80	4.55	6.30

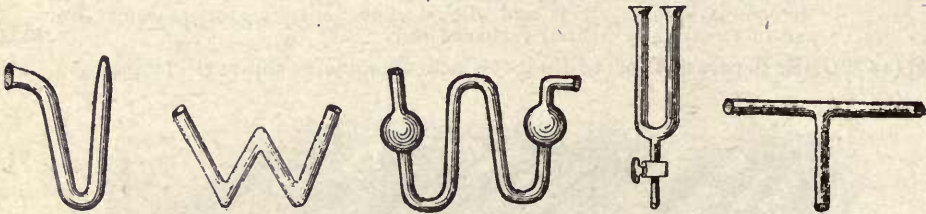
Larger sizes made to order. Prices upon application.



4100

4100 TUBES, Condensers, Tubes of glass, with adapters.

Length, inches.....	20	25	30	35	40
Each	\$0.25	.35	.45	.55	.65



4102

4104

4106

4110

4116

4102 TUBES, Condensing, V shape with bend at top.

Length, inches.....	8	10	12
Each	\$0.40	.50	.60

4104 TUBES, Condensing, W shape, 6 inches high.....\$0.50

4106 TUBES, Condensing, W shape, with two bulbs......60

4108 TUBES, Condensing, Y shape......50

4110 TUBES, Condensing, Y shape, with stopcock..... 3.50
Condensing, for sulphurous acid. See condenser.

4112 TUBES, Condensing, T shape, brass.

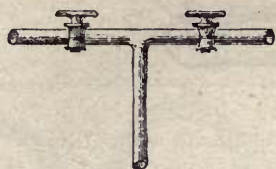
Bore, inches.....	1/8	3/8	1/4	3/8	1/2	3/4	1
Each	\$0.35	.35	.35	.40	.50	.65	.75

4114 TUBES, Y shape, brass, same price as glass.

4116 TUBES, Connecting, T shape, of glass.

Diameter, inches.....	1/8	3/8	1/4	5/8	3/8	1/2
Each	\$0.15	.18	.20	.23	.25	.30

4118 TUBES, Connecting, T shape, of capillary glass tubing, heavy wall.....\$0.35



4120



4122

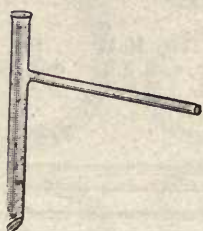
4120 TUBES, Connecting, T shape, glass with two stopcocks.....\$3.50

4122 TUBES, Connecting, Y shape, glass.

Diameter, inches.....	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{1}{2}$
Each	\$0.15	.18	.20	.23	.25	.30

4124 TUBES, Connecting, Y shape, glass, to connect a large pipe with two smaller ones. Diameter, large end, inches..... $\frac{3}{8}$ $\frac{1}{2}$
Each\$0.30 .40

4126 TUBES, Connecting, Y shape, of capillary glass tubing, heavy wall.....\$0.35
Tubes, Fermentation. See Urinalysis Apparatus.



4128



4130

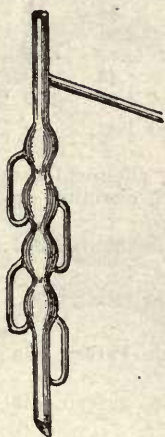


4132

4128 TUBES, Fractional Distillation.....\$0.35

4130 TUBES, Fractional Distillation, one bulb......35

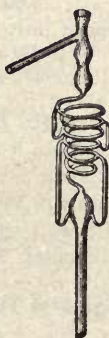
4132 TUBES, Fractional Distillation, two bulbs......50



4134



4136



4138



4139

4134 TUBES, Fractional Distillation, according to Lebel & Henninger.

No. of bulbs.....	2	3	4	5
Each	\$2.00	2.25	2.50	3.00

4136 TUBES, Fractional Distillation, according to Glinsky, with glass valves..\$3.00

4138 TUBES, Fractional Distillation, according to Anderlini..... 5.00

4139 TUBES, Fractional Distillation, Walter-Hempel's, filled with glass beads.

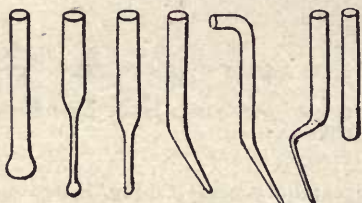
Length, ctm.....	30	40
Each	\$2.50	3.00



4140

4140	TUBES, Ignition, heavy hard glass, test tube form without lip.				
	Length, inches.....	4	5	6	8
	Per dozen.....	\$0.50	.70	.85	1.00

a b c d e f g



4146



4148

4144	TUBES, Ignition, hard glass, with bulb at end.				
	Length, inches.....	4	5	6	8
	Each	\$0.15	.18	.20	.30
4146	TUBES, Reduction, for Arsenic test. Form a, b, c, e, f, g, per doz.....	\$0.50			
4148	TUBES, Reduction, hard, glass.				
	With bulbs		1	2	3
	Each	\$0.20	.25	.35	



4150



4152

4150	TUBES, Safety, after Babo.....										\$0.75
4152	TUBES, Specimen, flat bottom, of heavy glass. Corks are charged extra.										
	Size, inches.....	2x¼	2x½	2x¾	3x¾	3x½	3x¾	3x1	4x½		
	Per dozen.....	\$0.18	.20	.24	.20	.20	.26	.30	.26		
	Per gross.....	1.80	2.00	2.40	2.00	2.00	2.60	3.50	2.60		
	Size, inches.....	4x¾	5x½	5x¾	5x1	6x½	6x¾	6x1	8x1		
	Per dozen.....	\$0.30	.30	.40	.50	.40	.48	.60	.80		
	Per gross.....	3.00	3.00	4.00	5.00	4.00	4.80	6.00	8.00		
4154	TUBES, Specimen, Round bottom, prices and dimensions as No. Tubes, Titre, see No. 3949(a).										

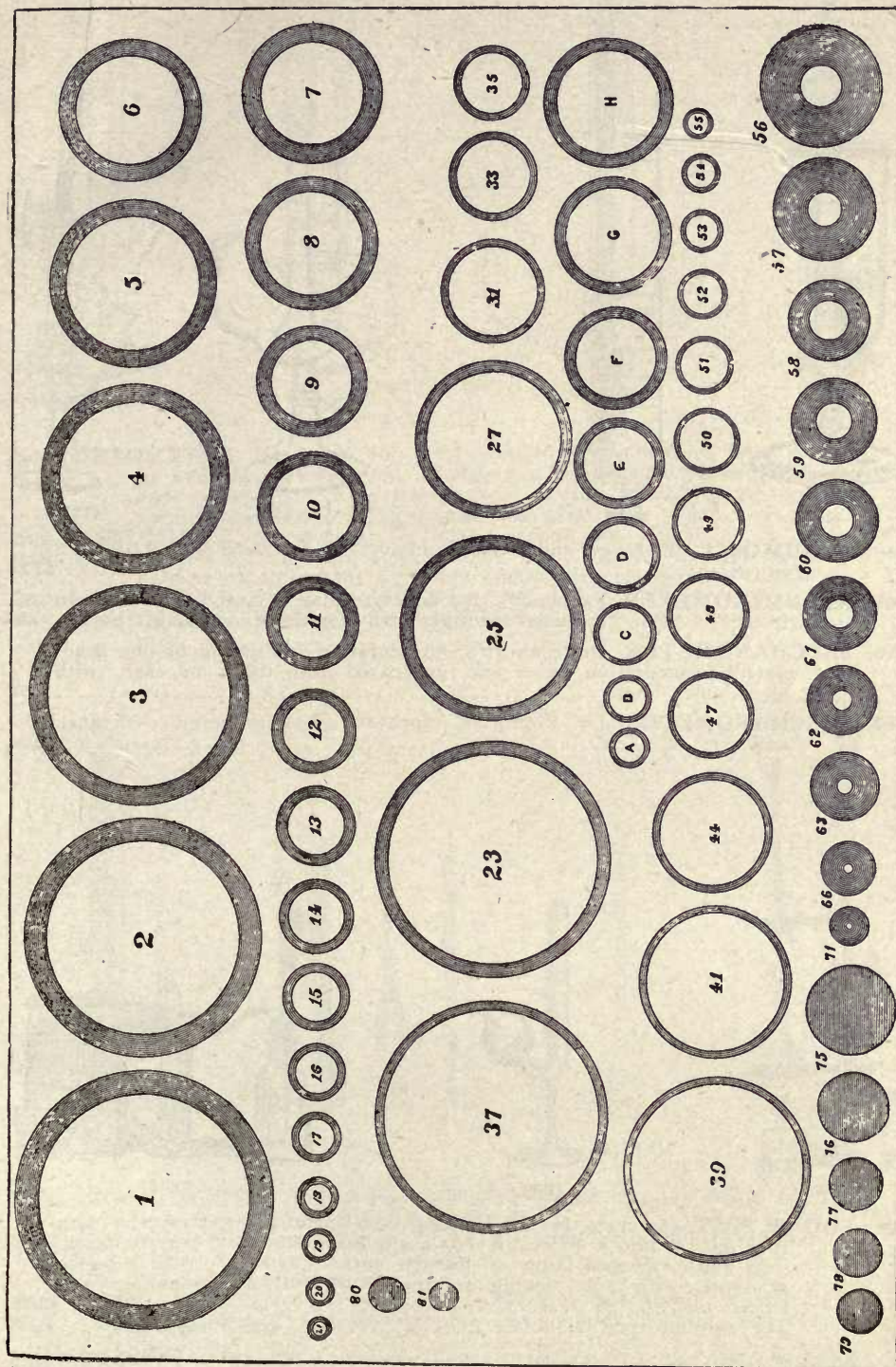
GLASS TUBING, medium wall, best lead free, made expressly for chemical use; the only suitable tubing for glass blowing and fitting up chemical apparatus; in lengths of 1½ metres.

4158	GLASS TUBING, Size from 3 to 25 millim. extern. dia., per lb.....	\$0.50
4160	GLASS TUBING, Size from 26 to 50 millim. extern. dia., per lb.....	.60
4162	GLASS TUBING, Size from 51 to 65 millim. extern. dia., per lb.....	.75
4164	GLASS TUBING, light wall, same price as above.	
4166	GLASS TUBING, Barometer Tubing, from 7 to 10 millim. extern. dia., per lb.....	.75
4168	GLASS TUBING, Capillary Tubing, from 2.5 to 5 millim. extern. dia., per lb.....	1.00
4170	GLASS TUBING, Combustion, hard glass, per lb.....	.80
4172	GLASS TUBING, Same as above, small sizes for blowpiping, 6-10 mm., per lb.....	1.00
4176	GLASS TUBING, Gauge Tubing, for Mercury or Water Gauges, well annealed from 6 to 50 mm. extern. dia., glass, extra stout, double annealed	.80
4178	GLASS TUBING, As above, cut in any length to order, per lb.....	1.00
4180	GLASS TUBING, Test Tube Tubing, sizes 12, 16, 20, 23, 25 millim., per lb.....	.50
4182	GLASS TUBING, Thermometer Tubing, per lb.....	.90
4184	GLASS TUBING, Same as above, white back, per lb.....	1.20

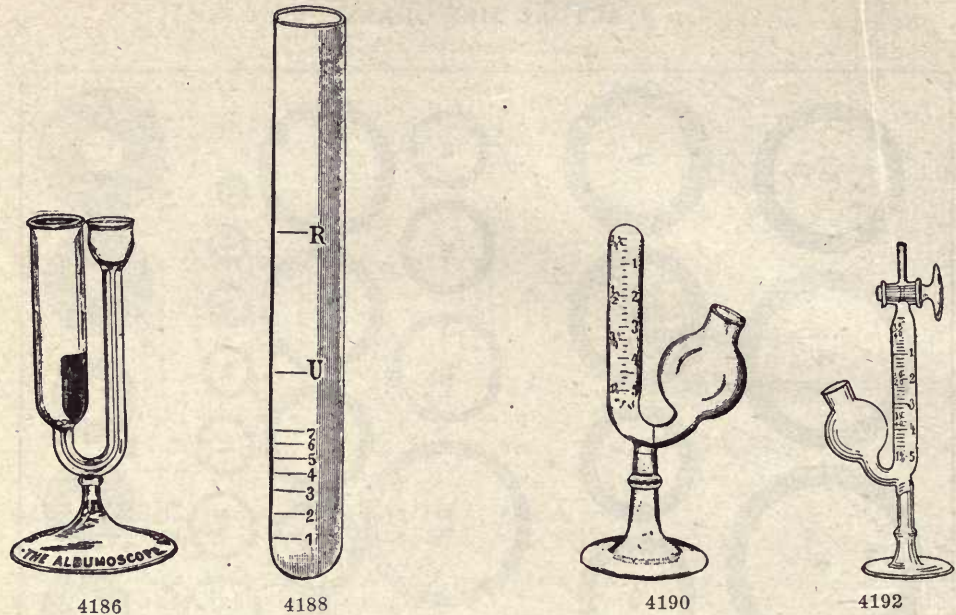
NOTE.—When ordering please give exact outside and inside measurements in millimeters or send samples.

GLASS TUBING

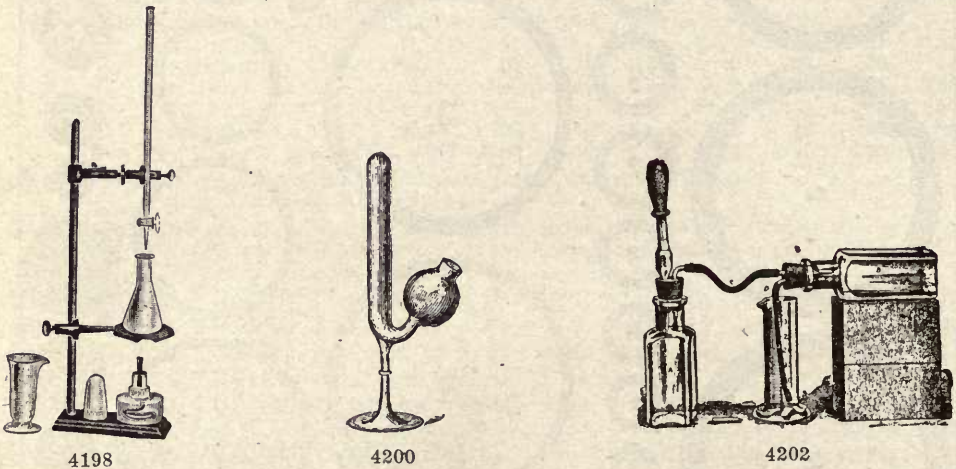
ACTUAL SIZE CHART



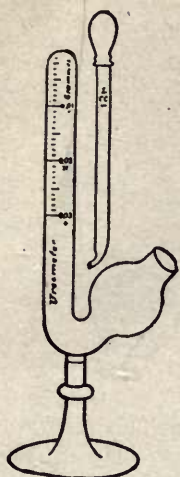
URINE ANALYSIS APPARATUS



- 4186 ALBUMOSCOPE, a new and scientific instrument for determining albumin in urine.....\$1.25
- 4188 ALBUMINOMETER, Eschbach's, for direct reading of amount of albumen in urine. Scale graduated on tube; with directions for using. Each.. .50
- 4190 SACCHAROMETER, Dr. Einhorn's, fermentation, consisting of one graduated fermentation tube and graduated test tube; in case, with directions. Each......75
- 4192 SACCHAROMETER, Dr. Einhorn's improved, glass-stoppered, with flask and test tube..... 2.50



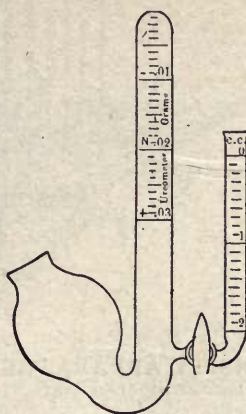
- 4198 SUGAR TEST, for urine, by Dr. Purdy. Consists of an iron support with ring and clamp, a 10 cc. or 200 grain glass stopcock burette, flask, iron gauze, alcohol lamp or Bunsen burner, and 50- cc. or 2 ounce graduate, with 1-lb. testing solution, with full directions for use. Price, net.....\$3.75
The solution, per lb. bottle..... 1.00
- 4200 TUBES, Fermentation. (a) Medium size, ungraduated..... Plain \$0.20 On foot .30
(b) Large size, ungraduated..... .25 .35
- 4202 UREA APPARATUS, Squibb's, for the estimation of urea in urine by displacement, complete, with vials, graduated pipette, graduated cylinder, 50 cc., bottle of chlorinated lime and directions for using. Each.....\$3.00



4204



4206

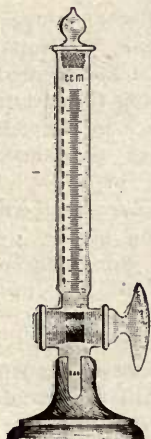


4208



4212

- 4204 UREOMETER, Doremus', for determination of amount of urea in urine by hydrobromate method. Consists of a graduated fermentation tube and graduated pipette for introducing the hydrobromate solution; graduations read to 1/10 per cent. On glass foot. Each.....\$1.50
- 4206 UREOMETER, the same as No. 4204, without foot. Each.....1.00
- 4208 UREOMETER, The same, improved by Hinds; urine required for test is delivered with greatest accuracy, and no gas escapes from the bulb.... 3.25
- 4210 UREOMETER, The same, with glass foot.....4.00
- 4212 UREOMETER, Huefner's, for determination of the amount of nitrogen in urea 5.50



4213



4216



4221(a)



4222

- 4213 PURINOMETER, Hall's. For estimating the amount of "Purin" nitrogen in urine, with directions for use.....\$12.00
- 4216 URINOMETER, according to Dr. Squibb, with thermometer, cylinder and table of corrections..... 3.00
- Without thermometer..... 2.00
- 4218 URINOMETER, 1,000 to 1,060, with cylinder, in box, single instrument.... 1.00
- 4220 URINOMETER, The same, with fine thermometer in body, with cylinder, in box..... 2.50
- 4221 URINOMETER, Set of three spindles (1,000-1,020, 1,020-1,040, 1,040-1,060), for exact estimates, per set..... 4.00
- 4221(a) URINOMETER, Ammonia Tube, Folin's, for the absorption of Ammonia in Urine Analysis..... 1.50
- 4222 URINE TEST GLASS, with hollow stopper, for removing sediments for microscopic examinations..... 3.50



4226



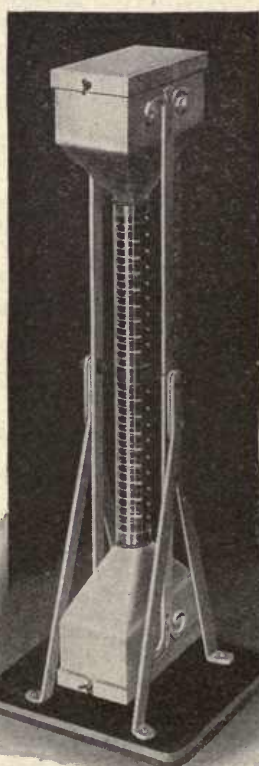
4227



4229

- 4226 VAPOR DENSITY APPARATUS, Victor Meyer's, complete as illustrated, with 2 glass stoppered vials.....\$2.75
- 4226a Inner Tube 1.50
- 4226b Outer Bath..... 1.50
- 4226c Small glass bottles with stoppers, per dozen..... 3.00
- 4227 VAPOR DENSITY APPARATUS, Lunge's, with side tube attached to the inner vessel, complete with 2 vials..... 2.75
- The outside tube only..... 1.50
- The inside tube only..... 1.50
- 4229 VAPOR DENSITY BULBS, Dumas..... .35

VOLUME OF LOAF APPARATUS

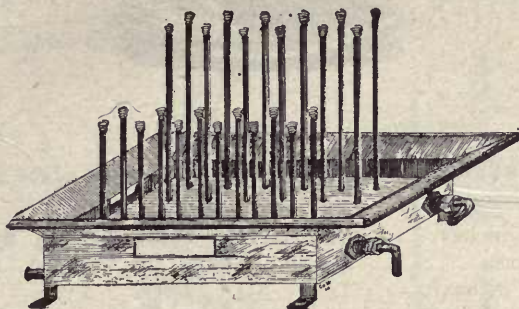


4231

Two aluminum receptacles, connected with a graduated tube, are suitably mounted on a pedestal and pivoted in the center for reversing the alternate ends. A funnel orifice in the center of the tubing causes the seed to flow uniformly from the top to the bottom receptacle like an hour-glass. This mechanical filling of the lower receptacle insures the same degree of compactness under all conditions, therefore, machine accuracy. To operate the measure, the lid of the top receptacle is removed, mustard seed is poured in until the standard quantity is registered. The loaf is secured to the top lid by a spring clamp; the lid is then replaced and the position of the two receptacles reversed; the seed flowing through the orifice in the center of the tubing fills in around the loaf in the bottom receptacle. The amount of seed displaced registers the volume of the loaf on the tubing, graduated in cubic centimeters. The operation is repeated with additional loaves, using the alternate receptacles. The receptacles are made to accommodate the regular commercial pound loaf.

Price\$50.00

TEST TUBE OR BOTTLE WASHER



4233

The above illustration shows the Washer made with 24 Washing Tubes. Twelve 8" and twelve 12". Dimensions over all 14"x17". Two Control Cocks.

This Washer, designed for the Johns Hopkins Hospital, enables one to rapidly Cleanse Test Tubes of all lengths, the longer Tubes being suitable for washing any tube up to 14" long, as the water when turned into the High Tube section by turning off the low service will spout six or more inches in the air. The whole 24 Tubes can be used where there are only short tubes to be washed and if the head of water has sufficient pressure.

The waste water will run off the Washer into the sink at the vent shown at the opposite end from the Control Cocks.

Hot or cold water can be used as desired. The inlet is at opposite end from the Control Cocks, and we furnish ample length Heavy Rubber Hose to connect to the usual water supply.

Price\$45.00

We are listing the above test tube washer, which we consider is an essential in a laboratory of any size. This washer is also adapted for washing such articles as Babcock Milk and Cream Testing Bottles. The apparatus washes both short and long tubes. Also furnished for tubes of 6, 8, 10 and 12" lengths, with a control cock for each size of tube. Prices for types other than the one herein listed upon request.

TEST TUBE BOILER AND STERILIZER

A most unique and practical addition to the laboratory.

It consists of a small cylindrical drum, having a nickel-plated metal body with a top and bottom of $\frac{1}{4}$ -inch transite. The dimensions of this drum are: height, $2\frac{1}{4}$ inches; diameter, $3\frac{1}{2}$ inches. The apparatus is mounted upon three legs.

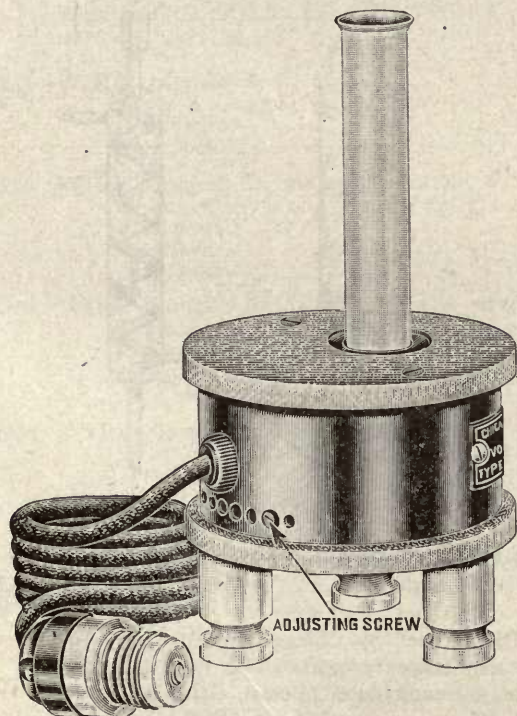
Located near the center of the drum there is a metal cup or cylinder $1\frac{1}{16}$ inches in diameter and $1\frac{1}{2}$ inches in depth. This is the heating receptacle.

The cup is encased in a resistance coil, which provides equal distribution of heat to the entire surface of the receptacle simultaneously, heating it uniformly and very quickly.

This resistance coil or heating unit is controlled by an automatic-electro thermo-regulator, contained within the drum. It is adjusted by means of a small screw. To reach the adjusting screw of the thermostat it is necessary to use a small screwdriver. This prevents tampering.

The thermo-regulator completely controls the temperature so that the contents of the test tube may be brought to the boiling point without boiling over. Metal rings are provided for the receptacle, permitting the use of the following sizes of test tubes: $\frac{1}{2}$ inch, $\frac{5}{8}$ inch, $\frac{3}{4}$ inch, and 1 inch.

Price, complete, including test tube and small crucible, as per illustration\$10.00



4235



4238

- 4238 WATCH GLASSES**, Best glass, well annealed with edges ground and polished, for covering beakers, etc.

Diam., inches.....	1	1½	2	2¼	2½	2¾	3	3¼	3½	
Per dozen.....	\$0.20	.25	.28	.50	.55	.60	.70	.75	.80	
Diam., inches.....	3¾	4	4½	5	5½	6	6½	7	8	9
Per dozen.....	\$0.90	1.00	1.40	1.75	2.00	2.40	2.80	3.00	4.00	6.00

- 4239 WATCH GLASSES**, with hole in center for use with stirring apparatus, etc.

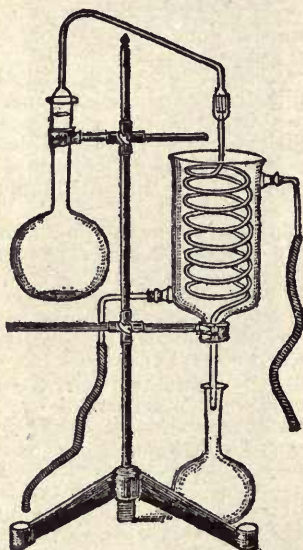
Diameter, inches.....	3	3½	4
Each	\$0.20	.25	.35

- 4241 WATCH SPRINGS**, For burning in oxygen, per dozen..... \$0.40

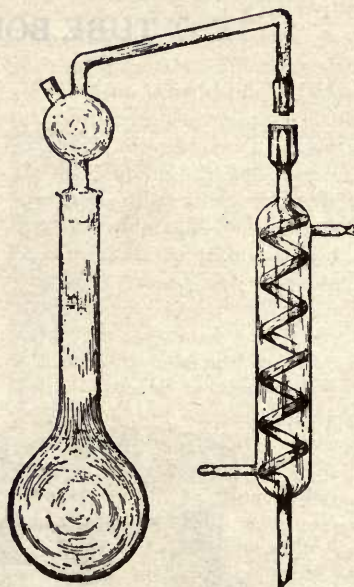
WATCH GLASSES, Counterpoised, see under "Balances."

WATCH GLASS CLIPS, see Clamps.

WATER ANALYSIS APPARATUS



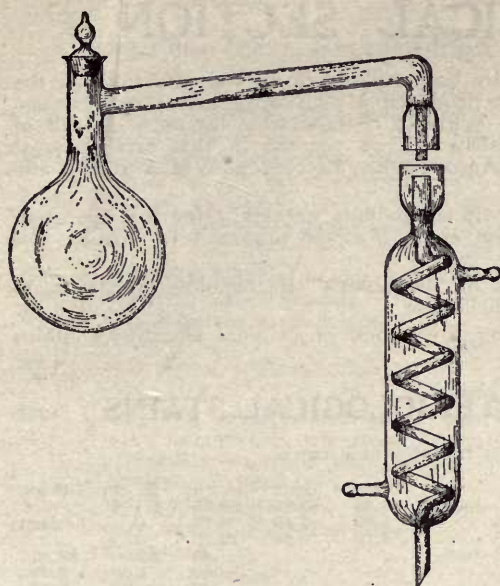
4252



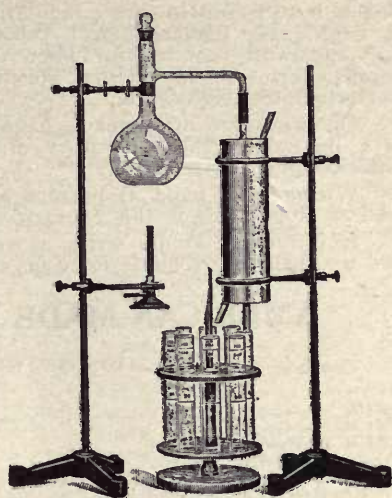
4254

- 4252 MUENCKE'S DISTILLING APPARATUS**, entirely of glass, with ground joints, capacity of flask 500 cc., complete..... \$12.50

- 4254 APPARATUS FOR DISTILLING**, as used by Chicago Board of Health for determination of ammonia, mercury seal. The flask is with inlet for the adding of the permanganate solution after the free ammonia has been distilled off..... 9.00



4256



4257

- 4256 APPARATUS**, Maharg's, for determination of ammonia in water, consisting of 1000 cc. G. S. flask, etc., with mercury seal. \$ 8.00
- 4257 DISTILLING APPARATUS**, For the determination of ammonia in water, as used by the Department of Health of New York City, consisting of a metal condenser with block tin condenser tube, eight Nessler cylinders graduated at 50 and 100 cc. in revolving support. Complete with flask, condenser, support; eight Nessler jars and support for same. 15.00
- The Flask only. 2.60
- The Condenser only. 4.00
- The Support for Nessler Cylinders. 3.00

HEHNER'S COLORIMETER, see No. 3241(f).

NESSLER'S JARS, see No. 2341(j).

WEIGHING BOTTLES AND TUBES, see Bottles, Weighing.

WICKS, see Lamps.

- 4258 WIRE**, Aluminum.
- | | | | | | | |
|--------------------|--------|------|------|------|------|------|
| B. & S. Gauge, No. | 16 | 18 | 20 | 22 | 24 | 26 |
| Per ounce | \$0.15 | .15 | .15 | .20 | .25 | .30 |
| Per pound | 1.00 | 1.00 | 1.00 | 1.20 | 2.00 | 4.00 |
- 4260 WIRE**, Copper, on one pound spools, B. & S. Gauge.
- | | | | | | | | | |
|-----------|--------|-----|-----|--------|------|------|------|------|
| Number | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 |
| Per pound | \$0.75 | .75 | .75 | .75 | .75 | .90 | 1.00 | 1.10 |
| Number | | | | 28 | 30 | 32 | 34 | 36 |
| Per pound | | | | \$1.20 | 1.30 | 1.40 | 1.50 | 2.00 |
- 4262 WIRE**, Copper, insulated, cotton covered, B. & S. Gauge.
- | | | | | | | | | |
|-----------|--------|------|------|--------|------|------|-------|-------|
| Number | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 |
| Per pound | \$1.00 | 1.00 | 1.25 | 1.25 | 1.35 | 1.50 | 1.60 | 2.00 |
| Number | | | | 32 | 34 | 36 | 38 | 40 |
| Per pound | | | | \$2.30 | 3.75 | 5.00 | 15.00 | 20.00 |
- 4264 WIRE**, Copper, insulated, silk covered.
- | | | | | | | | | |
|-----------|--------|------|------|--------|------|------|-------|-------|
| Number | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 |
| Per pound | \$1.55 | 2.00 | 2.25 | 2.50 | 2.75 | 3.00 | 3.25 | 4.50 |
| Number | | | | 32 | 34 | 36 | 38 | 40 |
| Per pound | | | | \$5.00 | 6.00 | 9.00 | 18.00 | 30.00 |
- 4266 WIRE**, German Silver, plain or covered, prices on application.
- 4268 WIRE**, Iron, chemically pure, for standardizing, per pound. \$1.50
- 4270 WIRE**, Nickel, per ounce.30
- Per pound. 3.50

PLATINUM, see Platinum Wire.

WIRE GAUGE, see Gauge.

WIRE GAUZE, see Gauze.

BACTERIOLOGICAL SECTION

The important position now occupied by Bacteriology in all considerations of the Public Health and in many industries has produced a constantly increasing demand for high grade Bacteriological Apparatus. While it is impossible for us to list all of the Apparatus required for Bacteriological work, we present in this catalog most popular forms of Incubators, Sterilizers, Auto-Claves, Microscopes, Microtomes and Bacteriological Glassware.

On the following page we have a list of equipments necessary for the operation of a Bacteriological Laboratory of medium size. We are prepared to furnish this outfit complete or separately.

We have on hand at present a stock of "Gruebler's" Bacteriological Stains, as well as those made in this country, as listed below.

If interested kindly write us regarding this stock of original Gruebler's Stains and we shall gladly quote price on same.

AMERICAN MADE BACTERIOLOGICAL STAINS

In glass vials with metal screw cap

	1 gm.	5 gm.	10 gm.	25 gm.	100 gm.
AZUR I—Giemsa	\$1.45	\$5.80	\$9.75	....	....
AZUR II—Giemsa	1.25	5.40	8.75	....	....
AZUR II Eosin—Giemsa	1.70	6.80	12.25	....	....
Bismark Brown45	\$0.90	\$3.15
Brilliant Green80	1.60	5.60
Congo Red45	.90	3.15
Crystal Violet60	1.20	4.20
Eosin, soluble in water60	1.20	4.20
Eosin, soluble in alcohol60	1.20	4.20
Erythrosin	1.00	2.00	7.00
Fuchsin Basic, for bacilli60	1.20	4.20
Fuchsin Acid90	1.80	6.30
Gentian Violet60	1.20	4.20
Haematoxylin, pure crystals60	1.20	4.20
Jenner's Dry Stain .....	.25	.80	1.20	2.40	8.40
Malachit Green, crystals80	1.60	5.60
Methyl Orange—Indicator80	1.60	5.60
Methyl Violet 1 B60	1.20	4.20
Methyl Violet 2 B60	1.20	4.20
Methyl Violet 6 B60	1.20	4.20
Methylene Blue, Bact., for bacilli45	.90	3.15
Methylene Blue, B. X.60	1.20	4.20
Methylene Blue, medicinal pure	1.00	2.00	7.00
Neutral Red .....	.25	1.00	1.50	3.00	10.50
Orange G60	1.20	4.20
Safranin, soluble in water60	1.20	4.20
Scarlet Red90	1.80	6.30
Thionin90	1.80	6.30
Toluidin Blue90	1.80	6.30
Victoria Green90	1.80	6.30
Wright's Dry Stain .....	.35	1.40	2.50	5.00	17.50

Additional stains will be added from time to time, as soon as they have been tested and proven to be thoroughly reliable.

STAIN IN SOLUTION

Alum Carmine	\$0.25	Gentian Violet, Gram's	\$0.25
Alum Haematoxylin .....	.25	Goldhorn's Polychrome Methylene Blue .....	.40
Bismark Brown .....	.25	Haematoxylin Solution, Delafield's .....	.25
Borax Carmine .....	.25	Hasting's Eosinated Methylene Blue .....	.50
Carbol Fuchsin, Gabbett's .....	.25	Jenner's Eosinated Methylene Blue .....	.50
Carbol Fuchsin, Ziehl-Neelsen .....	.25	Krauss-Giemsa, Two Solution	1.25
Carmine Neutral .....	.25	Loeffler's Methylene Blue .....	.25
Delafield's Haematoxylin Solution .....	.25	Methylene Blue, Acid, Gabbett's .....	.25
Eosin, 1 p. c., Alcoholic .....	.25	Methylene, Loeffler's .....	.25
Eosin, 1 p. c., Aqueous .....	.25	Picro Carmine .....	.25
Eosinated Methylene Blue, Jenner's .....	.50	Polychrome Methylene Blue, Goldhorn's .....	.40
Eosinated Methylene Blue, Hasting's .....	.50	Solution of Iodine, Gram's .....	.20
Eosinated Methylene Blue, Wright's .....	.50	Solution Toison's .....	.15
Ehrlich's Tri-Acid .....	.50	Spirochaete, Giemsa's	1.00
Gabbett's Carbol Fuchsin .....	.25	Toison's Solution .....	.15
Giemsa's Spirochaete	1.00	Tri-Acid Ehrlich's .....	.50
Gabbett's Acid Methylene Blue .....	.25	Wright's Eosinated Methylene Blue .....	.50
Gram's Gentian Violet .....	.25	Ziehl-Neelsen Carbol Fuchsin .....	.25
Gram's Solution of Iodine .....	.20	Other Stains and Solutions Made Upon Request	
Gentian Violet, 1 p. c., Aqueous .....	.25		
Gentian Violet, 2 p. c., Alcoholic .....	.25		
Thymol Blue—acid range			
Brom-Phenol Blue			
Methyl Red			
Brom-Cresol Purple			
Brom-Thymol Blue			
Phenol Red			
Cresol Red			
Thymol Blue—alkaline range			

\$0.50 per decigram

These indicators are manufactured in a spirit of co-operation with medical research, rather than for profit. It is desirable, therefore, to distribute them in quantities of not more than five decigrams to a large number of investigators. In special instances, larger quantities may be obtained, should they be actually needed, and in the future, if large quantities of the indicators are required, the demand will be met.

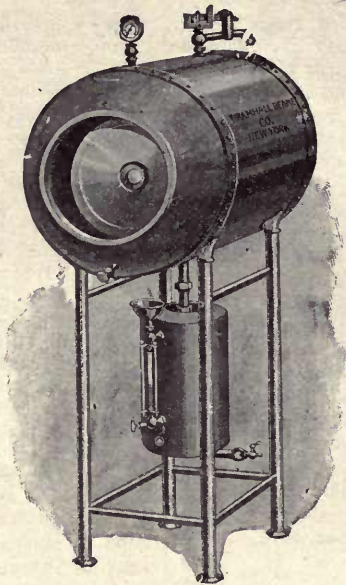
Equipment for a Bacteriological Laboratory of Medium Size

Cat. No.		Price	Cat. No.		Price
1402	1 only Waterbath, with rings and cover.....	\$ 5.75	5042	1 Sterilizing box for petri dishes, made of either sheet iron or copper.....	\$ 2.50
1531	6 each Beakers, low form with lip, of 100, 250, 600 and 1000cc	1.27	5036	6 dozen Petri dishes, 100x15mm.	18.00
1778a	1 Balsam bottle.....	.35	5138	1 Slide forceps.....	.15
1784	1 Capped bottle for cedarwood oil .....	.50	5132	1 Cover glass forceps.....	.15
1783	6 Dropping bottles.....	2.10		1 Instrument sterilizer, by hot water	10.00
1932	1 dozen Test tube brushes.....	.75	5140-2-6	3 Dissecting forceps.....	1.50
2054	2 only Burettes, glass stopcock, 25cc, 1/10.....	3.50	5192	1 "Sahli" Haemoglobinometer..	9.00
2054	2 only Burettes, glass stopcock, 50cc, 1/10.....	4.50	5198	1 Talquist Haemoglobin scale..	2.00
2224	2 Porcelain Casseroles, 375cc..	2.00	2818a	1 Hot water funnel for filtering culture media, copper....	4.00
2240	1 large Laboratory Centrifuge, preferably supplied with a combination head for 4 tubes, 15cc and 4 tubes, 50cc.....	20.00	6114	1 Bacteriological incubator, having dimensions of about 26x18x18 inches, either heated by gas or electricity.....	77.00
2200	6 only Centrifuge tubes, 15cc, graduated	3.60	6180	3 Staining jars.....	1.05
2202	6 only Centrifuge tubes, 15cc, plain	1.20	6188	1 Laboratory microscope, supplies with Abbe condenser, triple nosepiece, objectives 16 and 4mm., oil immersion 1/12 and two oculars, in case.....	90.00
2275e	3 dozen Centrifuge tubes, 50cc, plain	1.50	6194	1 Mechanical stage for same....	19.00
2288	4 only Burette clamps.....	2.00	6224-38	12 ounces Cover glasses.....	12.00
2317	2 only Test tube holders.....	.50	6222	1 Darkfield Illuminator equipment	10.00
2500	4 Porcelain evaporating dishes, 100mm. diameter.....	1.60	6296	3 Slide boxes for 100 slides, 3x1 inch.....	2.25
2716	1 quire Filter paper, 20x20 inches square.....	.80	6334	1 Freezing attachment.....	10.00
2716	6 each packages of Filter paper of 75, 100 and 150mm diameter, 100 per pack.....	5.40	6342	1 Spencer rotary microtome with knife.....	130.00
2738	6 each Boiling flasks, flat bottom, of 100, 300, 500 and 1000 cc.	7.70		1 Razor stop.....	1.00
2760	6 each Erlenmeyer flasks of 100, 250, 500 and 1000cc.....	6.00		1 Belgian hone.....	1.00
2809	6 each Funnels, long stem of 50, 75, 100 and 150mm. diameter	10.50		1 Blue green hone.....	1.00
3490	1 each Porcelain mortar with pestle, of 100 and 140mm.....	1.60	6360	1 Inoculating needle with platinum wire.....	.75
3594	6 each Wax pencils, red and blue	2.00	6394-8	2 Dissecting scissors.....	1.10
3614	6 only Mohr's pipettes, 10cc; 1/10	3.90	6424	1 Hot air sterilizer of medium size	8.75
3614	1 dozen Mohr's pipettes, 1cc; 1/100	6.00	6438	6 Wire baskets for test tubes, to fit autoclave.....	4.80
3613	6 each Volumetric pipettes, 1, 5, 10 and 25cc.....	1.05	6432	1 only Celenta's syringe, 5cc, plain	4.25
3623d	2 Sterilizing boxes for pipettes, made of sheet iron or copper	3.00	6434	2 only Luer syringes, 2cc, with two needles.....	2.50
3740	1 each Filter ring of 2 and 3 inch diameter.....	.40	6434	1 only Luer syringe, 10cc, with two needles.....	4.50
3862	1 only Burette support, medium	1.00	6434	1 only Luer syringe, 20cc, with two needles.....	6.25
3814	1 Water still.....	17.00	6472	1 "Elei" Wassermann water-bath, large model, with necessary accessories for gas or electric heating.....	90.00
3904	2 Test tube racks for 16 tubes.	1.50		1 Animal operating board.....	4.75
3940	6 gross Test tubes, 4x½ inch, with lip.....	15.00		1 lb. Peptone	2.50
3940	6 gross Test tubes, 6x¾ inch, with lip.....	20.00		2 lbs. Agar Agar.....	2.50
3950-2	1 Thermometer	1.50		½ lb. Cedarwood oil for immersion	1.50
4188	2 Albuminometers, "Eschbach"	1.00		½ lb. Balsam Canada, dry dissolved in Xylol.....	1.50
4204	1 Ureometer, "Doremus".....	1.50		1 lb. Xylol .....	.40
4216	1 Urinometer, "Squibb".....	3.00		10 grams each of the following stains, dry powder: Bismarck Brown, Eosin, Fuchsin, Gentian Violet, Methylene Blue, Safranin, Orange G. Scarlet Red, Neutral Red, Wright's stain.....	9.00
5000-2	1 High pressure Sterilizer—autoclave—either vertical or horizontal pattern.....	75.00		2 grams each Azur I and II....	8.00

Price, Total.....\$790.02

Equipment above ordered complete a discount of 5% is allowed.

BACTERIOLOGICAL AND MICROSCOPICAL APPARATUS



5000

5000 AUTOCLAV OR DIGESTER, "Eclipse" Patented, Made of extra heavy copper and brass throughout, no iron or other metal to rust or corrode. The ingenious construction of the door, which is of cast brass and is convexed to maintain perfect symmetry of the body. When opened, it fits snugly the inside body of this sterilizer, leaving the entrance and interior entirely clear.

The door and head are perfectly ground and fitted, requiring no packing or gaskets, which are always a source of considerable annoyance and expense. The Eclipse sterilizers have no locks or spring on the door. No device to get out of order.

They may be opened or closed instantly without effort.

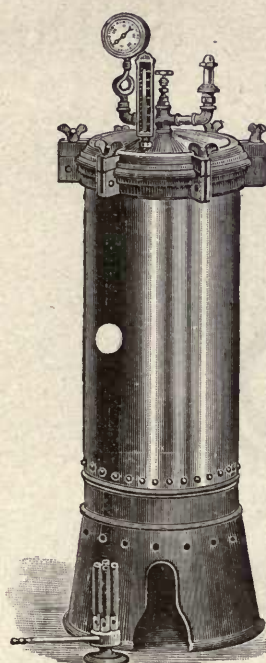
It is impossible to open the door while there is the slightest pressure in the interior, and there is never any danger of scalding. We emphasize this statement as numerous accidents have occurred with faulty mechanical arrangements on sterilizer doors or leaky gaskets.

The steam fills the outer jacket and enters the inner chamber at once. This operation prevents the contents from becoming moist by the condensed steam.

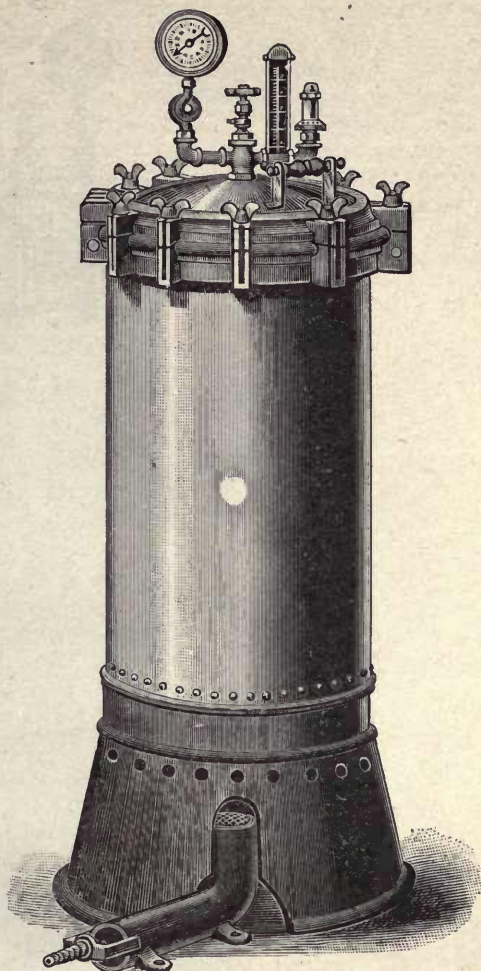
Can be used as a free steam, non-pressure sterilizer by opening the air cock if desired. Mounted on white enameled stand. Heated by Steam, Gas, Gasoline or Petroleum.

No.	Inside Diameter	Height Inside	Diameter Door	Copper	Nickel-Plated
0B	12"	16"	8"	\$146.25	\$155.25
1B	16"	20"	10"	168.75	180.00
2B	20"	24"	12"	200.00	215.00
3B	22"	28"	14"	250.00	270.00
4B	25"	28"	16"	333.00	358.00

Special Prices for Electric Heat. State voltage when inquiring for prices.



5002



5008

5002 AUTOCLAV, For sterilization under Steam pressure.

This Apparatus is for sterilization under steam pressure. The boiler is made of heavy polished copper, tin-lined, with seamless bottom provided with a perforated tray with two shelves, and four tube burner. The lid is made of cast brass, nickel plated and fitted with a ground joint, no washers being necessary to make it steam-tight; it is held in position by 6 thumbscrew clamps.

The apparatus is tested and guaranteed to stand a pressure of 35 pounds to the square inch, is provided with a pressure gauge, thermometer and safety valve, the latter is set at 30 pounds, but may be increased or decreased. The small pet valve must be kept open until the steam escapes, thereby forcing all the air out of the boiler.

The inside dimensions are 24 inches deep and 11 inches diameter. The base is made of sheet iron and is 8 inches high. Extreme height of the apparatus is 44 inches.....

\$75.00

5004 AUTOCLAV, same as above, but with hinged lid..... 80.00

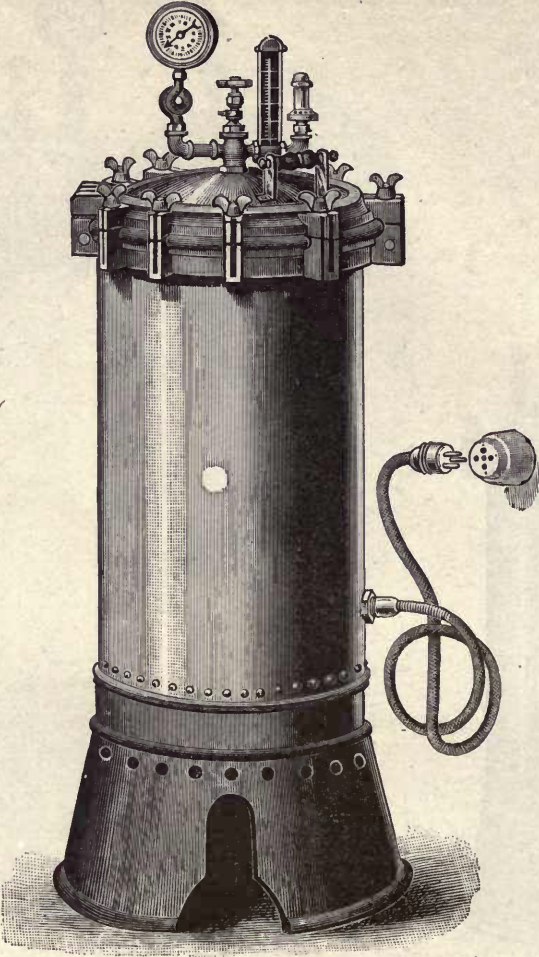
5006 AUTOCLAV, same as above, hinged lid and nickel-plated..... 85.00

5008 AUTOCLAV, same as described above, but larger size, with hinged lid, 10 thumbscrew clamps, inside tray and large burner.

The inside dimensions are 26 inches deep and 14 inches diameter; extreme height, including base, is 46 inches.....

100.00

5010 AUTOCLAV, same as No. 5008, but nickel-plated..... 110.00



5012

- 5012 AUTOCLAV OR DIGESTER, same as No. 5002, but Electrically Heated, complete, with cord and plug; size, 11x24 inches.....\$100.00
- 5014 AUTOCLAV, size 11x24 inches, with hinged lid..... 105.00
- 5016 AUTOCLAV, size 11x24 inches, but nickel-plated..... 115.00
- 5018 AUTOCLAV, size 14x26 inches, with hinged lid..... 130.00
- 5020 AUTOCLAV, size 14x26 inches, but nickel-plated..... 140.00



5022

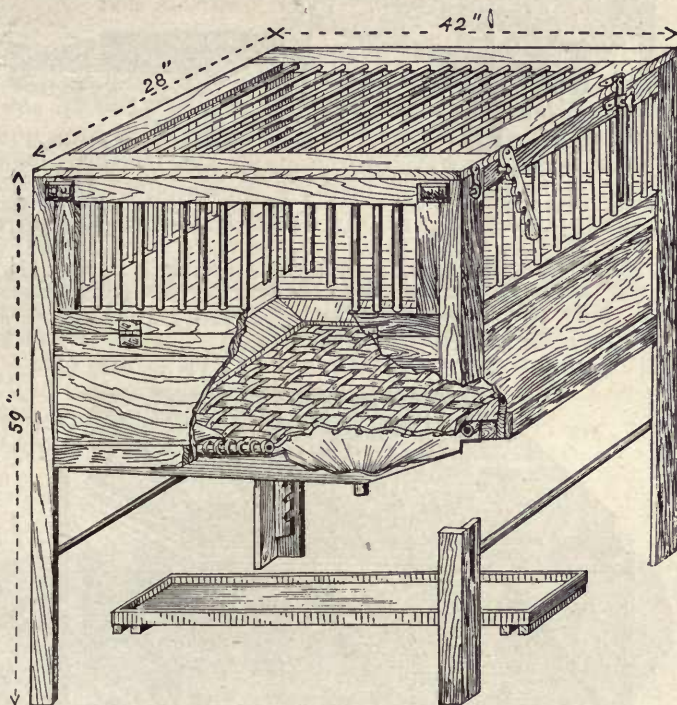


5024

- 5022 BOTTLES, Immersion Oil, with ground on glass cap and wire mounted in glass rod. very convenient and economical; capacity, 10 cc.....\$0.50
- 5024 BOTTLES, Immersion Oil, Leitz', convenient form with ground on glass cap and cedar wood dropper; capacity, 30 cc..... .50
- BOTTLE, Balsam, see Bottles.
- BURNER, Safety, Koch's, see Burners.

LABORATORY CAGES

We furnish bacteriological laboratories with all types of cages. They are constructed of various materials depending upon the use to which the cage is to be put. These cages, of which only a few are listed, are used for breeding purposes and for the close observation of animals used as subjects in inoculations and so forth. Each cage is designed to fit the particular animal under study, as the cat, dog and rodent. All cages are made so that they may be easily and quickly cleaned, and many are collapsible for storage and convenience in sterilizing. We shall be pleased to furnish detailed description and prices of any type not listed below. Any special type involving new ideas can be furnished by us with price upon application.



5025

5025 OAK DOG CAGE; this High Grade Dog Cage is constructed throughout of Solid Oak, Rubbed Oil Finish.

The inside is lined with extra heavy Zinc. Rods being of $\frac{1}{4}$ in. Steel heavily galvanized.

The floor is closely woven Steel Wire Cloth, very strong, mounted on a framework of pipe heavily galvanized.

Drain Pan is galvanized Steel, very thick.

Floor and Drain Pan are easily removed for cleaning.

The Front Door drops down out of the way.

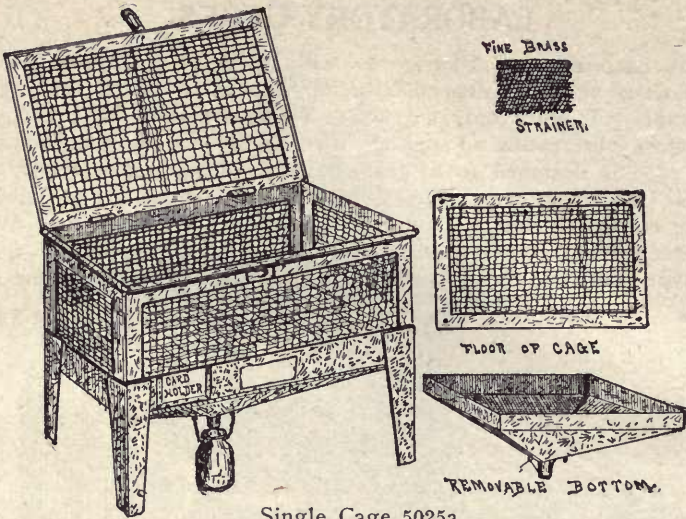
The Top may be raised to any angle desired.

The Shelf beneath holding the Urinal Collecting Vessel, is adjustable so any size vessel may be used.

Domes of Silence are used on the bottom of the legs to facilitate moving the cage about the Laboratory when desired.

These cages can be made any size desired. The measurements as indicated in the illustration have proven satisfactory for the usual large dogs, such as Setters or Newfoundlands, as well as smaller breeds.

Price\$100.00



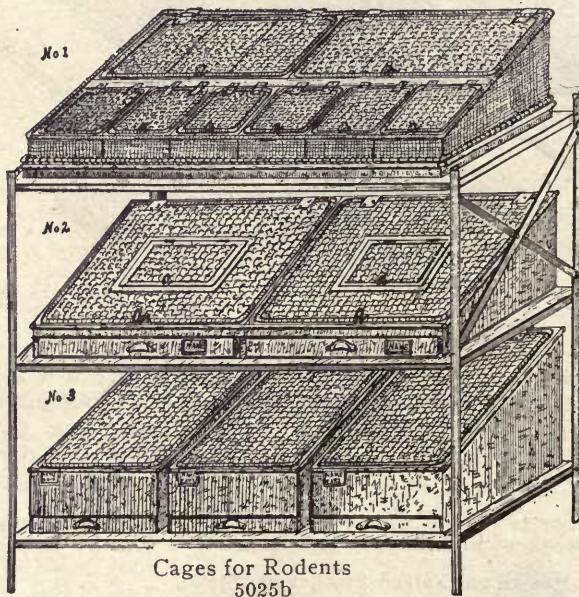
Single Cage 5025a

This is a much superior cage to the old type. The bottom is removable for cleaning or repairs as this is the part that wears soonest from corrosive action of Urine.

Bottom and Extra Brass Wire Drain underneath are easily removable. This is an Extra Heavy Cage, not flimsy, and makes a cage that is thoroughly satisfactory. Suitable for Guinea Pigs, Rats or Rabbits.

Dimensions, 20"x16"x8"; height over all, 19".

5025a Price, each.....\$10.00



Cages for Rodents
5025b

Style No. 1. Has movable partitions which can be adjusted so as to make small compartments when desired or the entire Cage may be thrown into one by removing all the partitions.

Price, No. 1 Cage, 48 inches wide, each.....\$35.00
24 inches wide, each.....25.00

Style No. 2. This case may be subdivided by Partition. The Top is fine mesh Wire Cloth over a strong frame. One small Feeding Door provided in the top of each Cage.

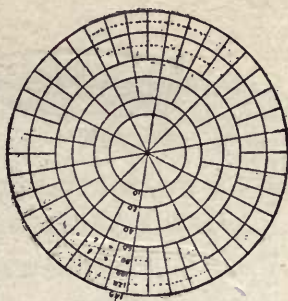
No. 2 Cage, 48 inches wide.....\$30.00
24 inches wide.....20.00

Style No. 3. The cheapest Rodent Cage which will give satisfaction. The Door only is Wire Mesh, has no feeding door. The balance of the Cage being of Heavy Galvanized Iron.

No. 3 Cage, 24 inches wide.....\$19.00
16 inches wide.....17.00
12 inches wide.....15.00



5026

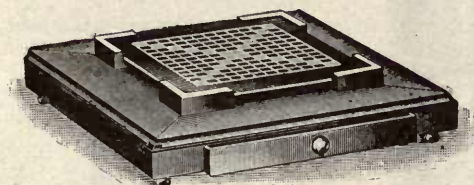


5028

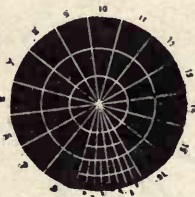
- 5026 IMMERSION OIL DROPPER;** This is a new device and fills a real need for a convenient and thoroughly clean method of handling and applying immersion oil to the object slide when used with immersion-oil objectives. It drops just one drop of oil at a time exactly where wanted by simply holding in position, point down over the slide, and pressing the top with thumb or finger. For refilling with immersion oil, the top portion is easily removed by simply unscrewing same.

Price\$2.00

- 5028 COUNTING APPARATUS, Wolffhuegel's.** For counting colonies of bacteria in plate cultures. Consists of a wooden base, 270 mm. square, with drawer for accessories, and a ruled glass plate. The rulings are 10 mm. squares, with the diagonal rows ruled to 3 mm. squares. The ruled surface is 120 mm. square. Black and white backgrounds are provided\$7.50
Extra ruled plate..... 3.00

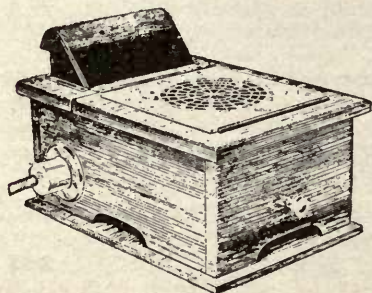


5030



5032

- 5030 COUNTING PLATE, Jeffer's;** ruled on glass; for use with the Wolffhuegel apparatus; the circular surface is divided into sectors which are subdivided into small spaces of equal area. (See Journal of Applied Microscopy and Laboratory Methods, Vol. 1, No. 3.).....\$2.50
- 5032 COUNTING PLATE,** of paper, 4 inches in diameter, for use with Petri dishes, per doz..... .50



5034

COUNTING APPARATUS, Stuart's, consisting of a hardwood box carrying a 16-candle-power, 110-volt electric lamp and with adjustable platform for holding Petri dish, which is illuminated by the oblique rays from the lamp, complete with counting plate.....\$17.50



5036



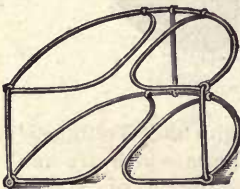
5038

5036 DISHES, Double or Petri Dishes, of best glass, properly annealed.

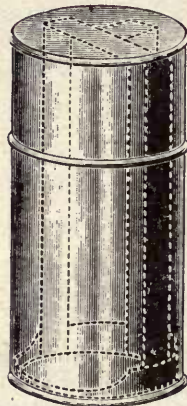
Diameter of lower dish, mm.....	50	80	100	100	150
Height of lower dish, mm.....	12	12	14	16	16
Per set of two.....	\$0.20	.20	.25	.25	.50

5038 DISHES, Petri Dish Covers, of red porous Clay, Nos. 1 and 2, without glaze. Nos. 10 and 20 glazed on bottom. Recommended for the Absorption of Moisture during incubation. Sizes Nos. 1 and 10 to fit upper and lower part of Petri Dishes 94 mm. in diameter. Size Nos. 2 and 20 Petri Dishes 100 mm. in diameter.

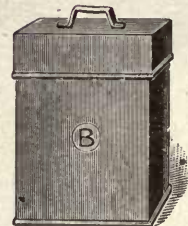
Size No.....	1	2	10	20
Diameter, inside, mm.....	96	105	96	105
Per Hundred.....	\$9.00	9.00	10.00	10.00



5040



5042



5046

5040 PETRI DISH HOLDER, to hold a number of Petri dishes 100 mm. in diameter for sterilization, made of nickeled spring wire.

Size, for dishes.....	3	6
Each	\$0.50	.75

5042 PETRI DISH HOLDER, made of polished copper, with inside tray to lift out; size, 9 inches high by 4½ inches diameter.....\$4.00

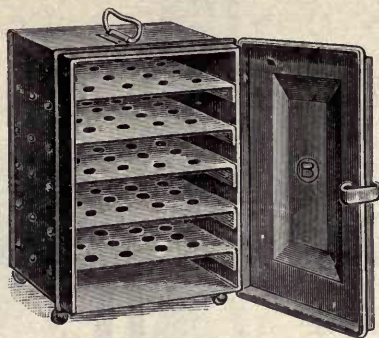
5044 PETRI DISH HOLDER, same as above, but made of sheet iron..... 2.50

5046 CULTURE-PLATE BOX, sheet iron, for holding plates during sterilization and storing them until used, with deep, overhanging cover; size, 5½ inches by 2 inches by 7½ inches high..... 2.50

5048 CULTURE-PLATE BOX, same as above, but of polished copper..... 4.00



5050

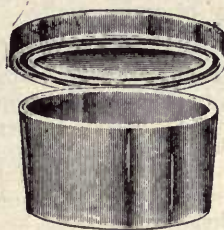


5052

- 5050 PETRI DISH HOLDER, round form, made of polished copper and nickel-plated, with five shelves, according to Dr. Pfuhl, for sterilization and sterile transportation of Petri and other glass dishes; size, 8 by 5 inches\$10.00
- 5052 PETRI DISH HOLDER, same as above, but square form; size, 7 by 5 by 5 inches 9.00



5054



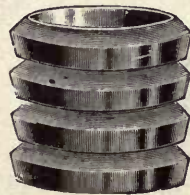
5056



- 5054 DISHES, Double Dishes, or Moist Chambers, of heavy glass, with polished edges, without knob.
Diameter, ctm. 14 18 20 25
Each\$0.75 1.00 1.20 1.40
- 5056 DISHES, Preparation, so-called Stender Dishes, American make, covers ground on.
Diameter, mm. 36 50 50 60
Height, mm. 24 30 35 90
Each\$0.12 .15 .18 .20



5058

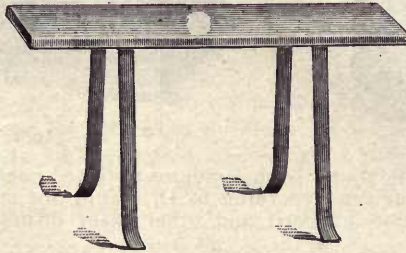


5062

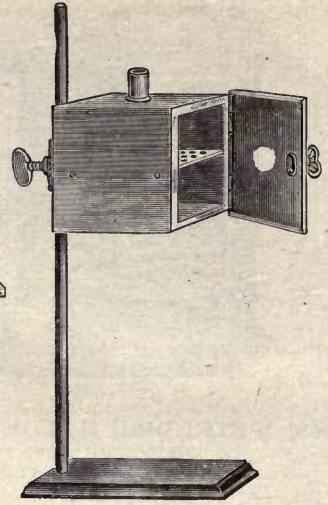
- 5058 DISHES, Staining or Mounting, of glass, square form with vertical surface ground for writing on, with glass plate cover.
Per dozen\$1.00
- 5060 DISHES, same as above, best cut and polished.
Per dozen 3.00
- 5062 DISHES, Staining or Mounting, so-called Syracuse Watch glasses, improved form, outside diameter 65 mm., inside diameter 50 mm., beveled plain edges.
Per dozen75
- 5064 DISHES, same as above, with ground beveled edges for writing on.
Per dozen 1.25
- 5066 DISHES, same as above, with special ground in grooves so that dishes stack up airtight.
Per dozen 1.50



5068

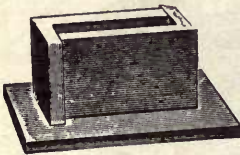


5074

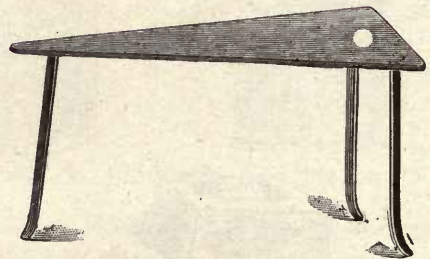


5070

- 5068 DISHES, Staining, Kraus',** of Aluminum for heating three slides in a minimum quantity of stain; each.....\$0.30
Per dozen..... 3.00
- 5070 DRYING OVEN, Hæmatological,** for blood work and fixing specimens by dry heat; made of polished copper, 4x4x4 inch; with attached clamp mounted on rectangular support..... 6 00
- 5072 DRYING TABLE,** for fixing blood preparations and sections on slides, consisting of heavy copper plate, 15 inches long, 4 inches wide, mounted on legs 8 inches high..... 1.50
- 5074 DRYING or Warming Table.** Professor Carl Huber is the designer of this table. It is intended for fixing blood preparations to be stained by the Ehrlich method, also for fixing sections to slides, drying, mounting, etc. The top is of copper with rounded edges; the legs are removable. 10x39 cm., height 20 cm..... 1.75



5076

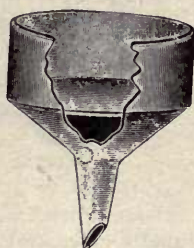


5078

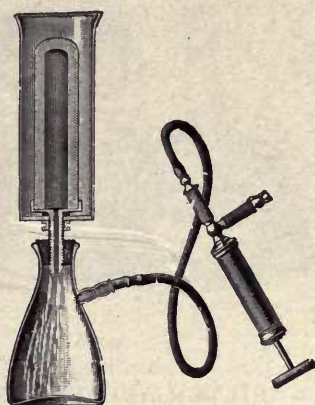
- 5076 EMBEDDING BOXES,** for embedding objects in paraffine, consisting of two metal right angles with metal plate. By placing the two parts in different positions, various sized objects may be embedded.
Height, mm..... 20 30
Each\$0.50 .50
- 5078 EMBEDDING TABLE.** This table is for embedding objects in paraffin. It consists of a triangular copper plate 40 cm. long and 19 cm. wide at the large end. A burner is placed under the acute angle of the plate and the heat is transmitted through the metal.....\$3.50
- 5080 FIBER BLOCKS,** of red fiber, with finished edges, for holding specimens for sectioning.
Size, mm.....15x15x10 20x15x10
Per hundred..... \$5.00 7.50



5082



5084



5086

5082 FILTERS, Pukal's, of porous Porcelain Clay, for filtering solutions from the outside to inside of flasks by means of filter pump.

Capacity, cc.....	50	140	150	1000
Each	\$0.75	1.00	1.75	3.00

5084 FILTER Funnel, Maasen's, of porcelain, with stationary porous filter plate.

Diameter, mm.....	70	110	165
Each	\$1.50	2.50	4.00

5086 FILTER, Berkefeld Laboratory; neatly nickel-plated and designed to be screwed to any regular $\frac{3}{4}$ -inch hose bib faucet. A two-way cock may be used, which enables either filtered or unfiltered water to be drawn without removing the filter. Length, 6 inches; diameter, $2\frac{3}{4}$ inches. **\$4.50**

5088 Cylinder for renewal for No. 5086..... **1.75**



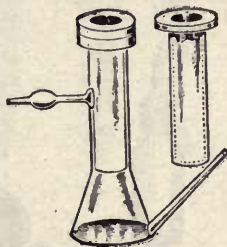
5090



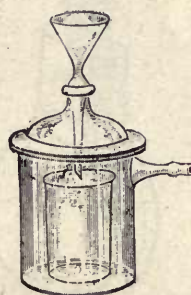
5092



5094



5096



5098

5090 FILTERS, Bougie-Pasteur-Chamberland, of porous clay with glazed rim, 20 cm. long, 25 mm. diameter..... **\$1.25**

5092 FILTERS, Bougie, as above, with glazed rim and nipple; 25 cm. long, 25 mm. diameter..... **1.25**

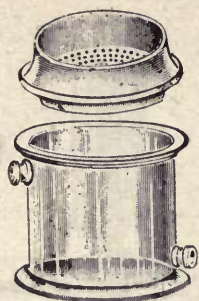
5094 FILTERS, Bougie, as above, pencil form, with small bore, 15 cm. long, 10 mm. diameter..... **.30**

5096 FILTER APPARATUS, Meucke's, for filtering fluids under pressure, consisting of glass vessel with side tubes and filter bougie, complete.... **4.75**

Extra glass parts..... **2.50**

Extra filter bougie..... **2.25**

5098 FILTER APPARATUS, Witt's, with ground joints, jar $6\frac{1}{2}$ inches high and $4\frac{1}{8}$ inch inside diameter, complete..... **6.50**



5100



5102



5104

- 5100 FILTER APPARATUS**, Buchner's consisting of glass jar with two tabulatures and ground on porcelain sieve.
 Diameter of sieve, 15 ctm. complete.....\$9.00
 Extra glass jars..... 5.00
 Extra porcelain sieves..... 4.00

- 5102 FLASKS**, Culture, Pasteur's, with long bent neck and side tube.
 Capacity, cc..... 100.. 250 500
 Each\$0.50 .65 1.00

- 5104 FLASKS**, Culture, Chamberlain's, with ground on helmet.
 Capacity, cc..... 25 50 100 200
 Each\$0.50 .75 1.00 1.60

- 5106 FLASKS**—Culture, Billings', with ground stopper and ground on cap, for gelatine and serum.
 Capacity, cc..... 100 250 500
 Each\$0.60 .75 1.00



5108



5110



5114



5116

- 5108 FLASKS**, Culture, Kollé, Pyrex Glass. Capacity, 320 c.c..... .75

- 5110 FLASKS**, Culture, Freudenreich's, with ground on helmet.
 Capacity, cc..... 25 50 100 200
 Each\$0.50 .75 1.00 1.60

- 5112 FLASKS**, Culture, Freudenreich's, with ground on helmet and side tube.
 Capacity, cc..... 25 50 100 200
 Each\$0.50 .75 1.00 1.65

- 5114 FLASKS**, Culture, Miquel's, with flat bottom and ground-on cap; for use with bacterial counting apparatus.
 Capacity, cc..... 50 75 100
 Each\$0.75 1.00 1.55

- 5116 FLASKS**—Culture; much used in yeast cultures.
 Capacity, 20 cc..... .50



5118(A)



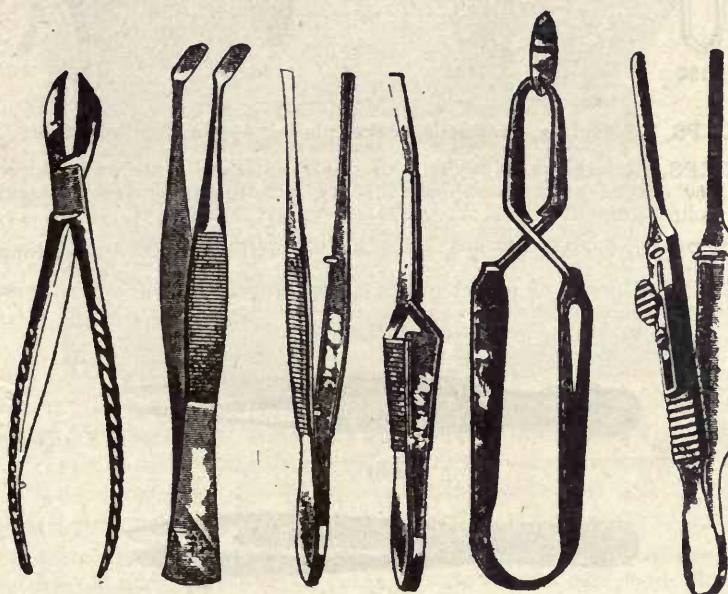
5118(B)



5118(C)

5118 FLASKS, Culture, Fernbach's Antitoxine. For diphtheria cultures. Of best clear white glass. Capacity, 2 liters.

Style	A	B	C
Each	\$1.60	2.90	2.50



5120

5122

5124

5126

5128

5130

5120 FORCEPS, Bone-Cutting. Strong, accurately made blades; pinless lock joint holding the blades together firmly during use, and also permitting their separation for cleaning. The spring is also removable.

Length, inches	8	9
Each	\$4.25	5.00

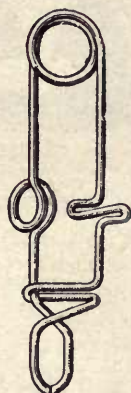
5122 FORCEPS, Cover Glass. Bent blades; length, $4\frac{1}{2}$ inches.....\$0.75

5124 FORCEPS, Cover Glass. Thin, straight blades; guide pin; length, $4\frac{1}{2}$ inches. .75

5126 FORCEPS, Cover Glass. Self-closing; thin, bent blades; length, 5 inches.... 1.00

5128 FORCEPS, Cover Glass, Cornet's. Made of one piece of spring brass, nickel plated. They are self-closing and hold the cover firmly. Only a small surface of the cover is touched by the tips of the forceps. Length, $4\frac{3}{4}$ inches50

5130 FORCEPS, Cover Glass, Ehrlich's. With long, flat blades which come together accurately so that a cover is held firmly on the edge during the operation of making a blood spread. Have locking device to hold blades together. Length, $5\frac{1}{2}$ inches..... 1.50



5132



5134



5136



5138

- 5132 **FORCEPS**, Coverglass, Stewart's, nickel plated, $4\frac{1}{2}$ inches long.....\$0.15
- 5134 **FORCEPS**, Coverglass, Novy's, with lower flattened plate and upper narrow curved point, enabling the easy picking up of coverglasses; $4\frac{1}{2}$ inches long 1.00
- 5136 **FORCEPS**, Coverglass, Novy's, as above, but with lock; $4\frac{1}{2}$ inches long.... 1.25
- 5138 **FORCEPS**, Miller's, of nickel plated spring wire, for holding microscopic slides when staining15



5140



5142

- 5140 **FORCEPS**, Dissecting, of steel, nickel plated, straight, with medium, file cut points, $4\frac{1}{2}$ inches long50
- 5142 **FORCEPS**, Dissecting, very heavy, straight, with corrugated points, $4\frac{1}{2}$ inches long50
- 5144 **FORCEPS**, as above, $5\frac{1}{2}$ inches long..... .75



5146



5148

- 5146 **FORCEPS**, Dissecting, of steel, nickel plated, straight, with fine, smooth points, 4 inches long..... .35
- 5148 **FORCEPS**, as above, curved, with fine, file cut points and guide pin, 5 inches long50



5150



5152

- 5150 FORCEPS, Dissecting, best quality, nickel plated, straight, with fine, file cut points, $4\frac{1}{2}$ inches long50
- 5152 FORCEPS, as above, curved, $4\frac{1}{2}$ inches long..... .50



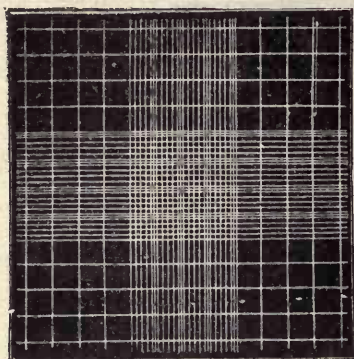
5158

- 5154 HAEMACYTOMETER, American Standard, complete with Levy counting chamber with Neubauer ruling, with two cover glasses and one pipette for red and one for white corpuscles, in leather case.....\$15.00
- 5156 HAEMACYTOMETER, American Standard, complete with Levy counting chamber with Neubauer ruling, with two cover glasses and one pipette for red and one for white corpuscles, in leather case, with Bureau of Standards certificate for both counting chamber and pipettes..... 20.00
- 5158 HAEMACYTOMETER, American Standard, complete with Levy counting chamber with double Neubauer ruling, with two cover glasses and one pipette for red and one for white corpuscles, in leather case..... 18.00
- 5160 HAEMACYTOMETER, American Standard, complete with Levy counting chamber with double Neubauer ruling, with two cover glasses and one pipette for red and one for white corpuscles, in leather case, with Bureau of Standard certificate for both counting chamber and pipettes 24.00

The Levy Counting Chambers possess the following distinct characteristics:

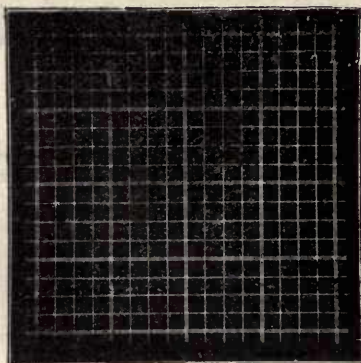
Increased visibility of the rulings when chamber is filled with solution. The new method of construction entirely avoids the cemented cell and the attendant danger of its loosening by the drying out of the balsam cement, and the possibility of the loosening of the ruled counting surface is also greatly reduced by this construction.

The parallel form of cell first suggested by Bürker and used in all Levy counting chambers provides a more uniform distribution of corpuscles over the ruled area and entirely removes the effect of atmospheric pressure upon the depth of the solution, a source of considerable error in the circular form chambers.



5162

Neubauer Ruling for blood counting



5170

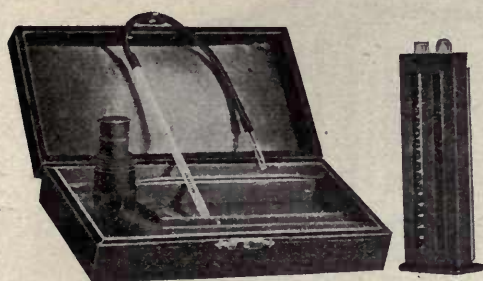
Fuchs-Rosenthal Ruling for spinal fluids

COMPONENT PARTS OF HAEMACYTOMETERS

5162	Levy Counting Chamber with Neubauer ruling, with two cover glasses, without case	\$ 7.00
5164	Levy Counting Chamber with Neubauer ruling, with two cover glasses, without case, with Bureau of Standards certificate.....	9.00
5166	Levy Counting Chamber with double Neubauer ruling, with two cover glasses, without case	10.00
5168	Levy Counting Chamber with double Neubauer ruling, with two cover glasses, without case, with Bureau of Standards certificate.....	13.00
5170	Levy Counting Chamber with Fuchs-Rosenthal ruling, for cytological investigations of cerebro-spinal fluids, with counting chamber 0.2 mm. deep, with two cover glasses, without case.....	6.00
5172	Diluting Pipette, Thoma, for red corpuscles, diluting 1 to 100 and 1 to 200, with rubber tubing and bone mouthpiece.....	2.00
5174	Diluting Pipette, Thoma, for red corpuscles, as above, but with Bureau of Standards certificate	3.50
5176	Diluting Pipette, Thoma, for white corpuscles, diluting 1 to 10 and 1 to 20, with rubber tubing and bone mouthpiece.....	2.00
5178	Diluting Pipette, Thoma, for white corpuscles, as above, but with Bureau of Standards certificate	3.50
5180	Mouthpiece, only, of bone, for above diluting pipettes.....	.05
5182	Rubber Tubing, 3 mm. bore, 1 mm. wall, for use with above diluting pipettes, per foot .....	.10
5184	Cover Glass, size 20x21 mm., approximately 0.5 mm. thick, with accurate plane surface in accordance with the requirements of the Bureau of Standards, for use with Levy counting chamber with single ruling; also suitable for use with the ordinary Thoma form of counting chamber .....	.30
5186	Cover Glass, size 20x26 mm., similar to above, for use with Levy counting chamber with double ruling.....	.30
5188	Case, of leather, velvet lined, for counting chamber only.....	1.00
5190	Case, of leather, velvet lined, for complete Haemacytometer.....	4.00

Prices subject to change without notice

DOUBLE COUNTING CHAMBERS—We especially recommend the use of the double chamber, in which the rectangular strip in the center of the cell is divided by parallel moats and each half provided with a Neubauer ruling, so that both red and white counts may be made at the same time without the necessity of cleaning and refilling the counting chamber. This double type of counting chamber has been for several years used in, and recommended by, the clinical laboratories of the Johns Hopkins Medical School and has been recently purchased in large quantities by the U. S. Army Medical Department, and is rapidly coming into wide use because of its convenience.



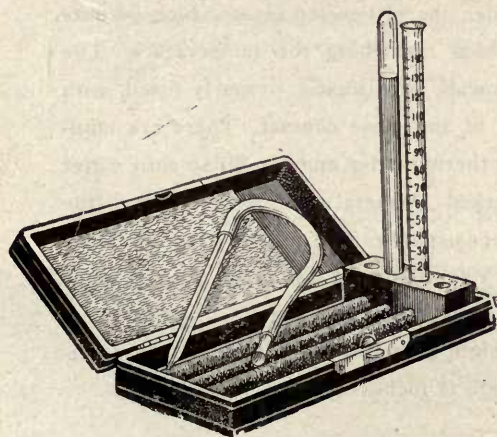
5192



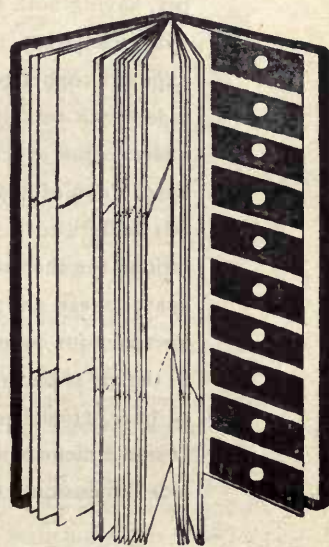
5194

- 5192 HAEMAGLOBINOMETER, Sahli,** for determining the percentage of haemoglobin in the blood. A measured amount of blood diluted with distilled water is placed in a graduated tube until it is of the same color as a tinted tube provided, when the percentage is read off on the scale. Accurate to within five or ten per cent. Latest modification for either day or night use. Complete in case.....\$ 9.00

- 5194 HAEMAGLOBINOMETER, Dare's,** manipulated with undiluted blood which is drawn by capillarity into a chamber of definite thickness and then compared with the colored prism by modified light from a candle 27.50



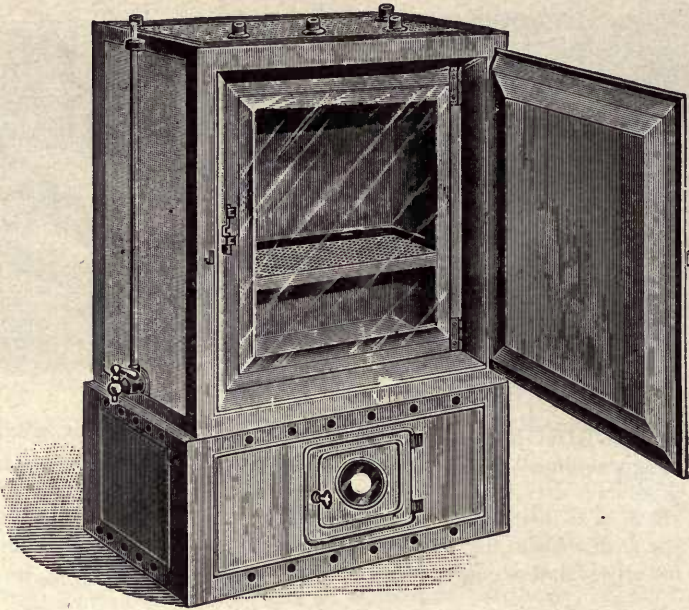
5196



5198

- 5196 HAEMAGLOBINOMETER, Grower's, Simple Form.** Consisting of sealed tube containing standard tint, graduated comparing tube, capillary pipette for measuring the blood and rubber base. Complete in case with directions 5.00

- 5198 HAEMAGLOBINOMETER, Talquist's,** a simple bed side test adapted to the use of every physician on account of its ease and accuracy of manipulation and inexpensiveness. Consisting of 50 strips of absorbent paper with scale attached, showing tints of Haemoglobin from 10 to 100 per cent, bound in book form..... 2.00

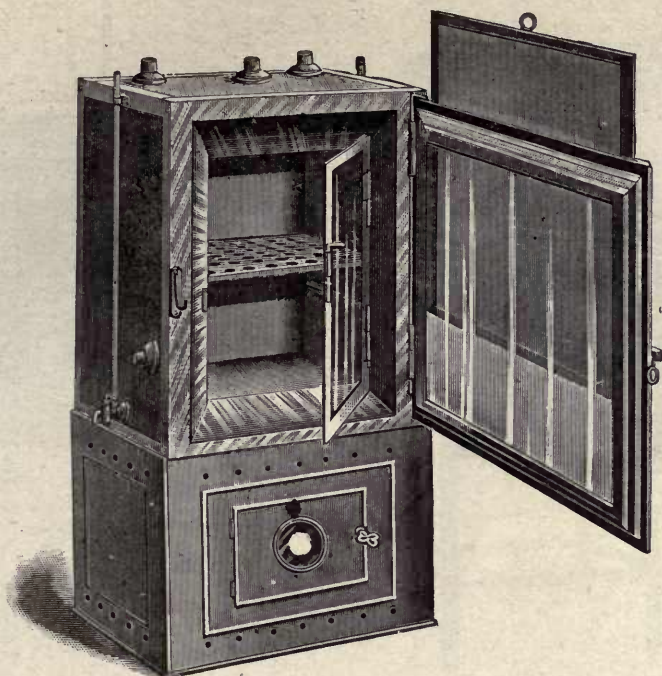


6100

6100 INCUBATOR, Bacteriological. Three walls, made of highly polished copper, having both air and water space, the outer surface being covered with insulating material to insure an even temperature, and the exposed copper parts are lacquered to prevent tarnishing. It is provided with two doors, the inner one of beveled glass, which permits observation of cultures, without disturbing the temperature. The outer door of copper, double wall, is prismatic, properly fitted, with felt buffers to insure perfect fit and close contact. There are tabulations for thermo-regulator, thermometer and for filling into water space; these are properly marked. A metal tube passes through the air space for connecting with gas supply. The control of temperature in the air space is affected by a ventilator on top of the oven. Height of base, 11 inches, with two shelves. Inside dimensions, 14 inches high, 12 inches wide, 10 inches deep; outside dimensions, 19 inches high, 17 inches wide, 14 inches deep..... 75.00

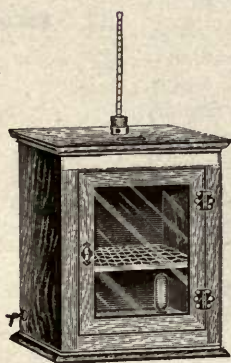
6102 INCUBATOR, with two shelves. Inside dimensions, 19 inches high, 12 inches wide, 10 inches deep; outside dimensions, 24½ inches high, 18½ inches wide, 14¾ inches deep..... 87.50

6104 INCUBATOR, with two shelves. Inside dimensions, 20 inches high, 18 inches wide, 10 inches deep; outside dimensions, 25½ inches high, 23¾ inches wide, 14¾ inches deep..... 100.00



6106

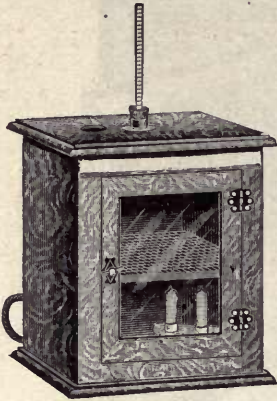
- 6106 INCUBATOR, Bacteriological, three wall.** In construction this is the same as No. 6100, with the exception that both doors are of glass, the outer one having a sliding and removable insulated cover, which permits the observation of objects within, without subjecting them to loss of temperature; with one shelf. Inside dimensions, 12 inches high, 9 inches wide, 9 inches deep; outside dimensions, 17 inches high, 14 inches wide, 13 inches deep. Enclosed sheet iron base is 10 inches high **\$75.00**



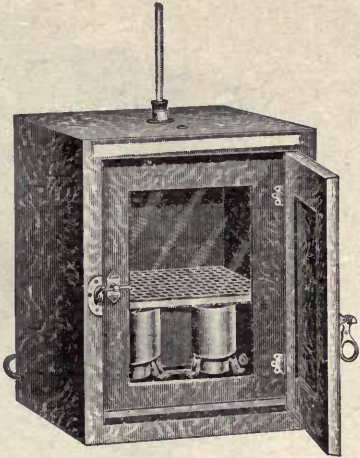
6108

- 6108 INCUBATOR, Electric.** Inside dimensions: Height, 9 inches; width, 7 inches; depth, 7 inches. Single door fitted with blue glass. Heating Medium—One 8 C. P. carbon lamp, controlled by our latest automatic electro-thermostat. Furnished with wire screen shelf and Centigrade thermometer. It is of single ply construction, but the space is so small that but a short time is required to bring it up to $37\frac{1}{2}$ degrees Centigrade. Price, complete **20.00**

While we are listing only representative types of single, double and triple Walled Incubator Sterilizers, both electrical and gas heated, we are admirably equipped to furnish on short notice and at reasonable prices any special types of Bacteriological Incubators, Paraffin Baths and Sterilizers.



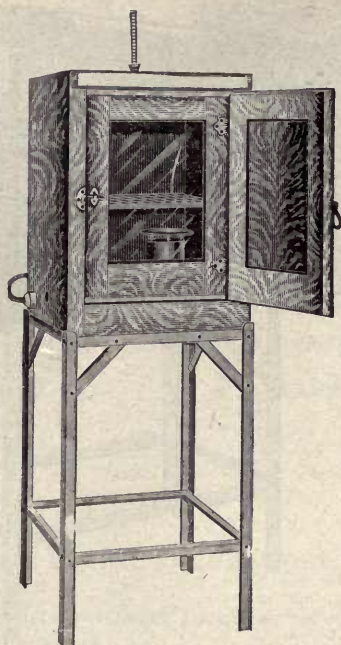
6110



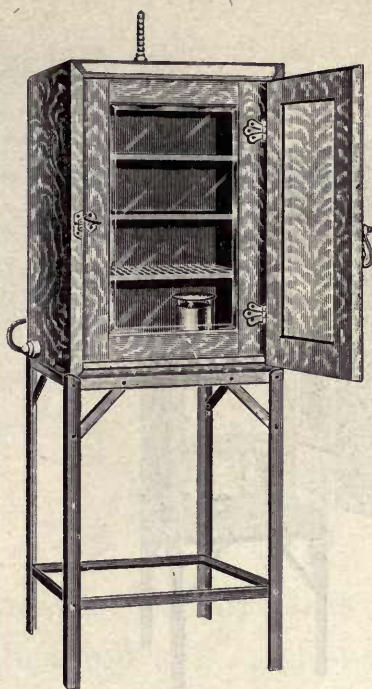
6112

6110 ELECTRIC INCUBATOR. Inside dimensions: Height, 12 inches; width, 9 inches; depth, 9 inches. Single door, fitted with blue glass. Heating Medium—Two 8 C. P. carbon lamps, or, if preferred, electric heating unit with pilot lamps, controlled by our latest automatic electro-thermostat. Furnished with one wire screen shelf and Centigrade thermometer. Incubator is made of five-ply construction.
Price, complete\$25.00

6112 ELECTRIC INCUBATOR. Inside dimensions: Height, 15 inches; width, 12 inches; depth, 10½ inches. Double door, the inner door fitted with clear glass. Heating Medium—Two 8 C. P. lamps provided with steel chimneys for protection or, if preferred, electric heating units with pilot lamp, controlled by our latest automatic electro-thermostat. Furnished with one wire screen shelf and Centigrade thermometer. The construction is five-ply Ventilation is particularly featured in this incubator, along the same lines as in our larger ones. As the incubating chamber increases in size, the question of proper ventilation becomes a most important factor. The steel chimneys which are used for protection, start a rapid motion of the air, thus stimulating circulation of the air currents, as soon as the electric current is turned on. This is just the incubator for a small laboratory.
Price, complete 44.00

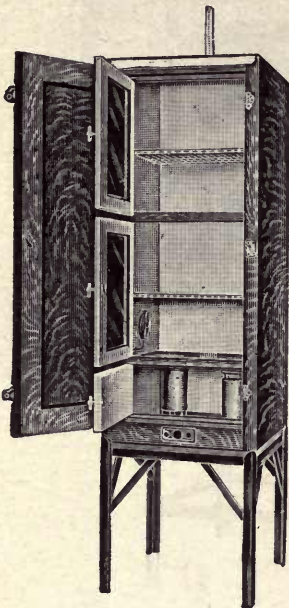


6114

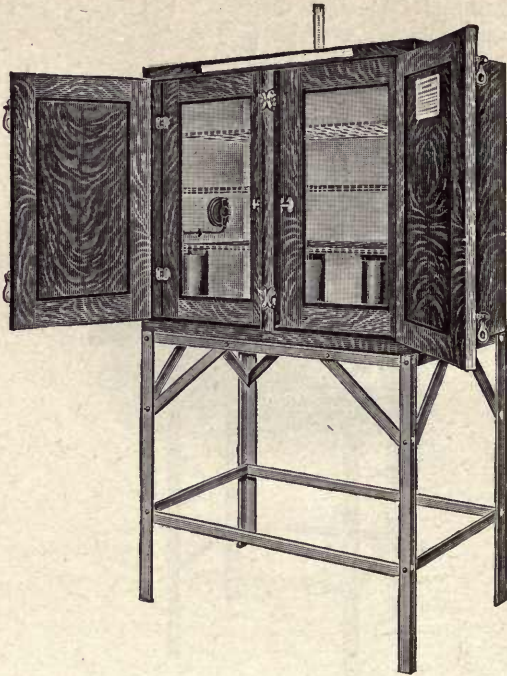


6118

- 6114 ELECTRIC INCUBATOR.** Inside dimensions: Height, 26 inches; width, 18 inches; depth, 18 inches. Double door; the inner door fitted with beveled plate glass. Heating medium used: Either two 16 C. P. Carbon lamps, provided with steel chimneys for protection, or, if preferred, electric heating units with pilot lamp, controlled by our latest automatic electro-thermostat. The incubator is furnished with one shelf, having an area of more than three square feet, and is mounted upon an enameled angle iron stand 32 inches high. It is artistically finished in quarter-sawed oak, with metal mountings, and is just the incubator for hospitals and laboratories doing a moderate amount of work. It has long been one of our most popular sized incubators.
Price, complete, with stand.....\$88.50
- 6116 ELECTRIC INCUBATOR.** Identically the same as No. 6114, but without angle iron stand, for use on table.
Price, complete 75.00
- 6118 ELECTRIC INCUBATOR.** Inside dimensions: Height, 30 inches; width, 20 inches; depth, 18 inches. Double door, the inner door fitted with beveled plate glass. Heating medium used: Either two 16 C. P. Carbon lamps, provided with steel chimneys for protection, or, if preferred, electric heating units with pilot lamp, controlled by our latest automatic electro-thermostat. The incubator is furnished with three wire screen shelves and Centigrade thermometer. Five-ply construction, artistic design and finish. Furnished complete with angle iron stand 32 inches high.
Price, complete 97.50
- 6127 ELECTRIC INCUBATOR.** This Incubator is the same as No. 6118 Electric Incubator, but without angle iron stand for use on table.
Price, complete 85.00



6122



6124

- 6122 ELECTRIC INCUBATOR.** Inside dimensions: Height, 50 inches; width, 18 inches; depth, 18 inches. Has two inside doors fitted with beveled plate glass and one outside panel door covering the two inside doors. The heating medium is either two 16 C. P. carbon lamps provided with steel chimneys for protection or, if preferred, electric heating units with pilot lamp, controlled by our latest automatic electro-thermostat. Four wire screen shelves, 10 inches apart, provide amply for shelf room. Within a floor space of 20 inches square there are nine square feet of shelf room. Furnished with angle iron stand 20 inches high and Centigrade thermometer. Weight, packed for shipment, 300 pounds.
Price, complete\$140.00
- 6124 ELECTRIC INCUBATOR.** Inside dimensions: Height, 30 inches; width, 36 inches; depth, 18 inches. The cabinet of this Incubator has two double doors, the inner doors fitted with beveled plate glass. Heating medium either three 16 C. P. carbon lamps provided with steel chimneys for protection, or, if preferred, electric heating units with pilot lamp, controlled by our latest automatic electro-thermostat. This Incubator is furnished with three wire screen shelves and centigrade thermometer. The Incubator is mounted on an angle iron stand 32 inches high, as shown in illustration. Weight, packed for shipment, 265 lbs.
Price, complete, with stand.....180.00
- 6126 ELECTRIC INCUBATOR.** This Incubator is identically the same as our No. 6124, except without stand for use on table. Weight, packed for shipment, 220 lbs.
Price, complete 160.00



6132

ELECTRIC INCUBATORS WITH DRAWER COMPARTMENTS

The Compartment Incubator is manufactured in three sizes to contain either 24, 36 or 48 drawers.

The idea is to furnish a separate drawer or compartment for the individual use of each student.

Inside dimensions of each compartment: Height, 6 inches; width, 5 inches; depth, 18 inches.

The Incubators are heated with lamps provided with steel chimneys for protection, or, if preferred, electric heating units with pilot lamps. Controlled by our latest automatic electro-thermostats.

The drawers rest upon steel frames and the entire Incubator is lined inside with animal hair and transite for perfect insulation, and to guard against fire.

These drawers are made of perforated galvanized steel so as to permit the heated air currents to circulate freely through all the compartments.

Proper ventilation and air circulation have required much careful investigation. These questions had to be settled by actual test, to the end that each and every compartment might retain its proper degree of temperature relatively.

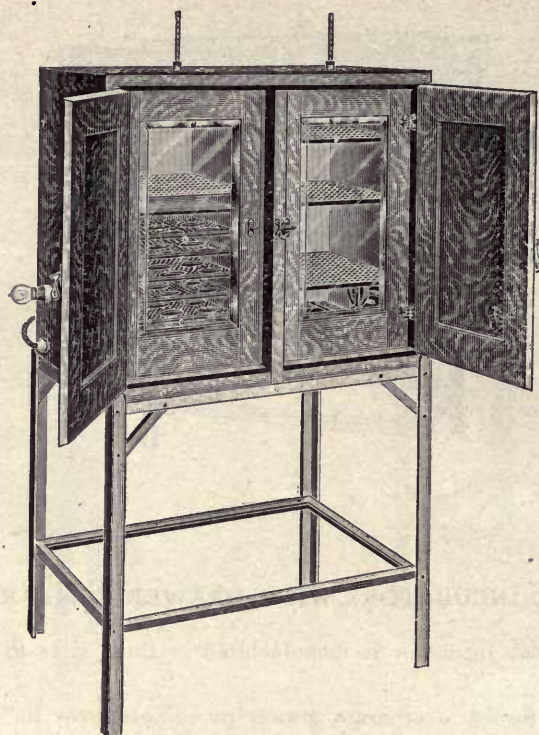
The cabinets are mounted on angle iron stands to raise them to a convenient height from the floor.

It is the ideal Incubator for Universities, Colleges, Schools or wherever cultures are made.

6128 INCUBATOR—Twenty-four drawer compartments. Outside dimensions of cabinet: Height, 41 inches; width, 42 inches; depth, 23¼ inches. Furnished complete with 26-inch angle iron stand and Centigrade thermometer. Price, complete.....\$350.00

6130 INCUBATOR—Thirty-six drawer compartments. Outside dimensions of cabinet: Height, 48 inches; width, 42 inches; depth, 23¼ inches. Furnished complete with 20-inch angle iron stand and Centigrade thermometer. Price, complete 490.00

6132 INCUBATOR—Forty-eight drawer compartments. Outside dimensions of cabinet: Height, 55 inches; width, 54½ inches; depth, 23¼ inches. Furnished complete with 20-inch angle iron stand and Centigrade thermometer. Price, complete 575.00



6134

6134 Combined Electric Incubator and Paraffin Oven. The above illustration represent an apparatus both unique and practical in Electrical Laboratory Equipment.

The size and construction is the same as in our No. 6133 Electric Incubator, except that a dividing partition has been added, which separates the compartment into two chambers of equal size of the following dimensions: Height, 30 inches; width, $17\frac{3}{4}$ inches. depth, 18 inches.

The partition is made of cork 1 inch thick, protected on each side with a layer of transite; the whole being $1\frac{1}{4}$ inches thick.

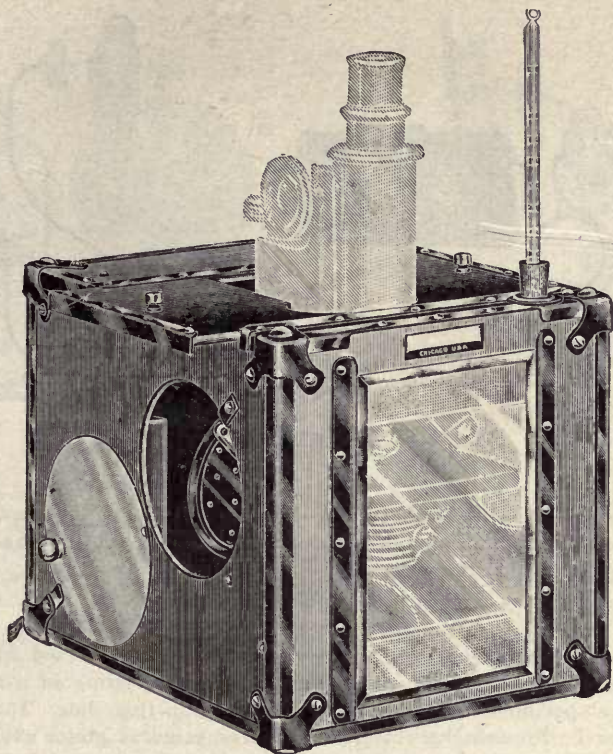
This construction insures perfect insulation between the two chambers, to the end that both may be used simultaneously—one for incubation and the other for paraffin work.

Each chamber is supplied with its own heating units, pilot lamp and Electro-Thermostat, thus permitting the use of either chamber irrespective of the other.

The Paraffin Oven contains Paraffin Receptacle (see description), which is provided with five shelves, each having nine holes $2\frac{1}{8}$ inches in diameter for paraffin dishes, thus affording large capacity for work.

This Combination Incubator and Paraffin Oven not only represents economy of space, but also obviates the necessity of having two separate pieces of laboratory apparatus. It is supplied with an angle iron stand 32 inches high and with thermometer for each compartment.

Price, complete, with stand as shown\$275.00



6136

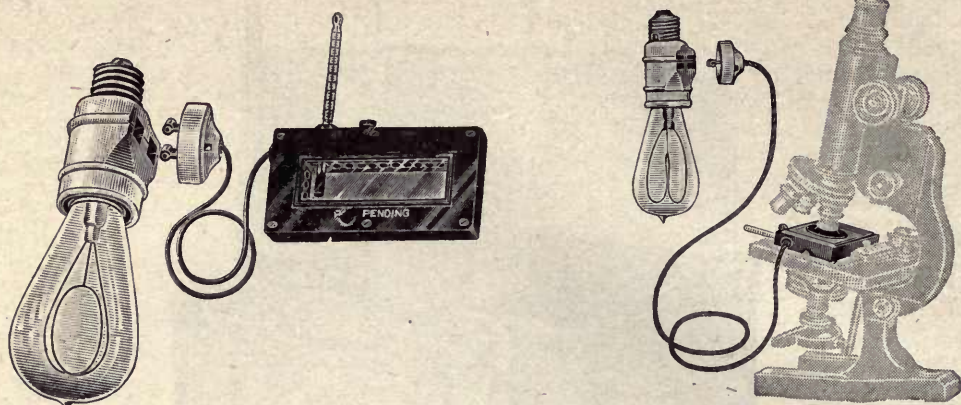
6136 ELECTRIC INCUBATOR, for Maintaining the Entire Microscope at a Constant Temperature. For those desiring to make a special study of Micro-organisms at blood temperature for any length of time, we have constructed a special Incubator, in which the entire microscope may be placed. Both sides are provided with hand holes, which enable the operator to manipulate the microscope in the ordinary way. When not in use the hand holes are closed by metal slides.

The Incubator is made of insulating material and has a removable plate glass front. A Bausch & Lomb B B H microscope, which is shown outlined in the cut, requires an Incubator 7 inches x 7½ inches x 9 inches deep inside dimensions.

Where the size of the microscope is similar to above, no extra charge will be made, but should the size of the microscope necessitate a considerable change, such alterations will be charged for accordingly.

This Incubator is particularly well adapted for universities and research laboratories. It is used to advantage in watching developments of Embryos of animal parasites and also in watching the growths of normal and abnormal tissues. It is convenient in bacteriological and zoological research work and in research work on blood. An apparatus like this opens up many new lines of research.

Price, complete, without microscope.....\$55.00



6138

6138 ELECTRIC INCUBATOR, for the Microscope Stage. This warming stage is a miniature Incubator complete in itself. It fits the mechanical stage of any standard microscope.

The outside dimensions are $3\frac{1}{2}$ inches x 2 inches x $\frac{1}{2}$ inch in thickness. The incubating chamber measures 3 inches x 1 inch x $\frac{1}{2}$ inch in depth and has a removable glass bottom consisting of a regular 3x1 slide. The specimen to be examined is placed on this slide. The condenser may thus be brought up close to the glass, same as under ordinary conditions, permitting the use of the oil immersion lens.

To cover top of Incubator we furnish a piece of clear Mica having a hole cut in center through which the lens is passed when making adjustment for the bottom slide. A rubber washer slipped over the lens is provided for sealing the opening between the lens and mica. (See illustration.) By this arrangement a perfect incubating chamber is obtained where bacteria may be observed for any length of time.

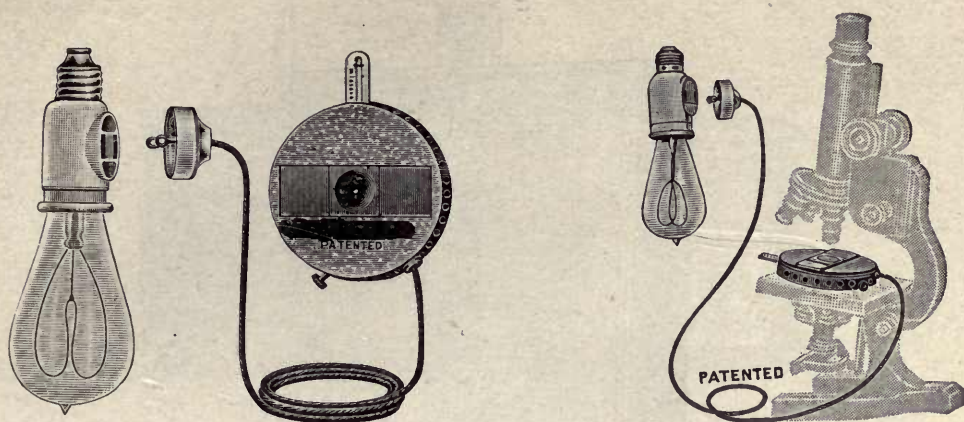
The Incubator is complete in every detail with heating element, thermometer and adjustable electro-thermostat, which automatically maintains a constant temperature inside the incubating chamber, as long as the electric current is on. This device can be adjusted for any temperature between 80 and 110 degrees Fahrenheit and is very accurate.

To operate, simply screw the current tap with its lamp into any 110-volt electric lamp socket and turn on the current.

Incubator answers all the requirements that a warming stage should have. In the **Widal test** for typhoid it may be used to great advantage. It is particularly well adapted for observation of Plant micro-organisms, such as **bacteria** and **yeasts** in a hanging drop, or a hanging Agar block; also for observation of Microscopic animal-organisms such as **Malarial Parasites**, **Trypanosomes** and **Amoeba**.

A number of diseases found in all tropical countries cannot be properly examined without a Warm Stage.

For cultivation of **Spirochetes** and **tumor cells** by the recent methods of Harrison, Noguchi and others, this apparatus has no equal.
Price, complete in velvet-lined case.....\$18.00



6140

6140 Electrically Heated "Warm Stage" for the Microscope. Our electrically heated "Warm Stage" is the only appliance of its kind now on the market. It will be found most compact and convenient and always ready for use, as it fits the stage of any microscope without adjustment.

To operate, simply screw the current tap with its lamp into any 110-volt electric lamp socket and turn on the current.

The Warm Stage measures $3\frac{1}{2}$ inches in diameter x $\frac{1}{2}$ inches in thickness and has a $\frac{3}{4}$ -inch hole in the center over which the regular microscopic glass slide may be placed.

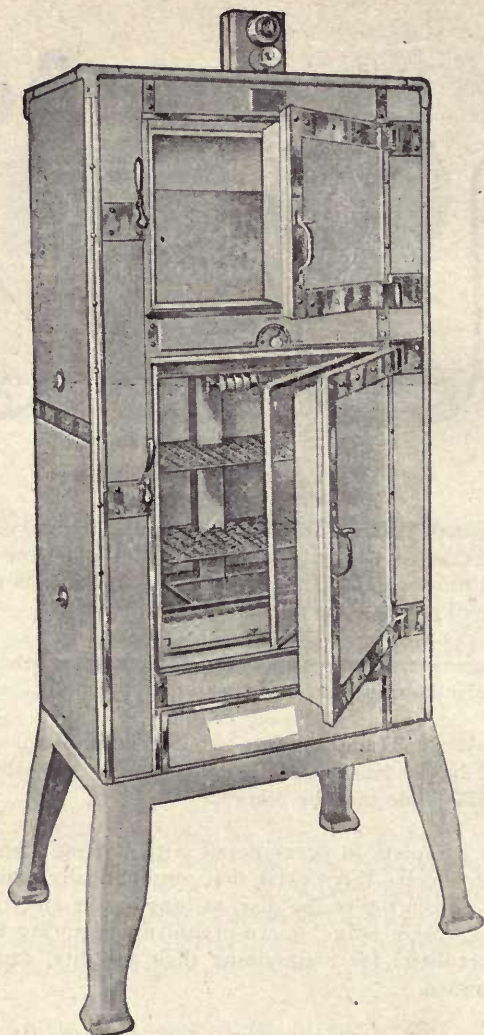
It is complete in every detail with heating element, thermometer and adjustable electro-thermostat that automatically maintains a constant temperature on the top of the disc, as long as the electric current is turned on. With this Warm Stage, micro-organisms requiring blood heat temperature (98° Fahrenheit) for maintaining their motility, can be readily discovered and examined.

The most important purposes for which the Warm Stage may be used, among others, are as follows:

- To determine if a case of dysentery is of amoebic variety, **Entamoeba Dystenteriae (Histolytica)**. The stools or scrapings from the rectum are searched on the Warm Stage for living moving Amoeba.
- To search for Plasmodium, **Plasmodium Malariae**, in the fresh preparation of patient's blood in the diagnosis of suspected Malaria.
- To ascertain if the fresh **Spermatozoa** is alive. This is of particular value in the Medico-legal cases.
- To discover the presence of Amoeba, **Entamoeba Buccalis**, in suspected cases of Pyorrhea Alveolaris.

When it is desired to examine a large area the Warm Stage is most practical. This device is intended to supplant the old, cumbersome hot water warm stage. It is light, compact and convenient. It relieves the operator of all worry as to its positive efficiency.

The illustration shows the application of the "Warm Stage" to the microscope table.
 Price, complete\$12.00



6142

6142 THELCO LOW TEMPERATURE INCUBATOR.

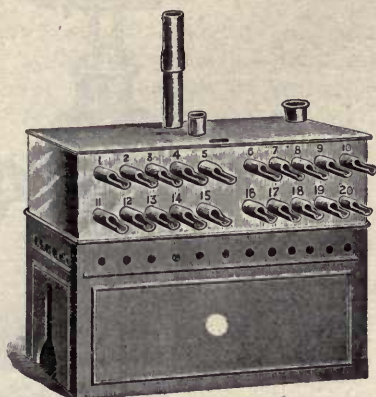
Constant temperature in the Thelco Incubator is maintained by circulation of cool air around the narrow water jacket of the incubator chamber. The cool air is admitted from the ice chamber through a shutter operated by a milled head screw on the outside. This shutter is adjusted to maintain a cool air temperature slightly below that required and the electric heating plate under the water jacket brings the chamber to the right temperature. A Thelco spiral bimetallic regulator controls the heating plate. This method maintains a uniform temperature throughout the chamber and is very economical of ice. In ordinary weather a single supply of ice will last several days. Although designed primarily for gelatine culture cultivations at 20° C., the incubator can be used just as satisfactorily at any predetermined temperature from about 10° C. to 40° C., or at temperatures below 10° C. by using a suitable cooling mixture.

The heating plate is a wire-wound resistance, readily removable and controlled by the strong but sensitive Thelco regulator, which maintains the temperature constant to 1° C. A switch for turning on and off the current and a pilot lamp are mounted on top of the apparatus.

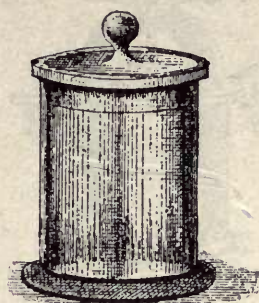
The incubator chamber is double-walled, of heavy copper and provided with three perforated shelves, which may be placed at any desired height. It has a felt-cushioned, glass door, which is air-tight. The cabinet is of wood, insulated with felt and dead air-spaces, making in all 10 walls. It is entirely sheathed in steel plate, handsomely finished in white porcelain, with polished aluminum trimmings. The incubator is mounted on a heavy iron base. Size, 46 inches high, 38 inches wide, 31 inches deep

\$325.00

(Please state voltage and current when ordering.)



6144



6148

6144 OPSONIC INCUBATOR. This is the form usually employed in America and has proved very reliable in research work where serum containing the washed leucocytes and the organisms under investigation must be kept at 37° C. for some time. The incubators are made of heavy polished copper, and are constructed with tubulations for a thermometer, thermo-regulator, and for filling the bath. A cup, 25x89 mm., is provided for holding instruments, and there are receptacles for twenty pipettes. Size, 14x8x4 inches. Sheet iron base 8 inches high.....\$25.00

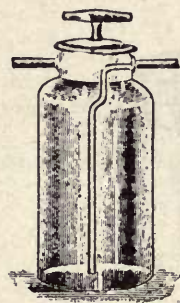
6146 OPSONIC INCUBATOR. Same as above, including 6 tubes, $\frac{7}{8}$ inch diameter, in the top to hold test tubes..... 30.00

6148 JARS, Anatomical, Glass, with air-tight ground stopper.

Height, cms.....	9	11	14	16	20	26	30
Diam., cms.	8	10	12	13	15	18	20
Each	\$1.50	2.00	2.50	3.00	3.50	4.75	8.25



6150



6154

6150 JARS, Aquaria.

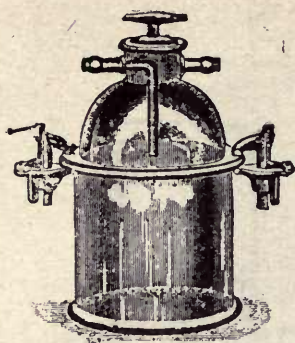
Capacity, gal.	$\frac{1}{2}$	1	2	3	5
Each	\$1.50	2.00	3.00	4.00	5.00

6152 JARS, Aquaria, on foot.

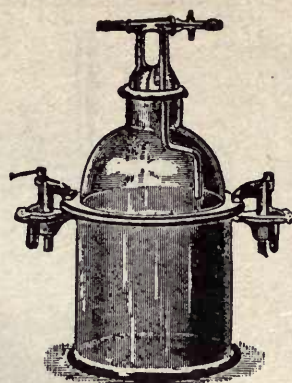
Capacity, gal.	$\frac{1}{2}$	1	2	3
Each	\$2.00	2.50	4.00	5.00

6154 JARS, Culture, Novy's. For tube cultures of anaerobic bacteria by gas or pyrogallate methods. Consists of a glass jar with inlet and outlet tubes in neck, and hollow stopper, having tube reaching to bottom of jar, and handle for turning, ground into neck. See Journal of Applied Microscopy, Vol II, No. 2.

Height, inches	6	8
Diameter, inches	$3\frac{1}{4}$	4
Each	\$4.50	\$6.00



6156



6158

6156 JAR, Culture, Novy's. For plate cultures of anaerobic bacteria by gas or pyrogallate methods. Similar in construction to No. 6154, but in two sections to permit the use of Petri dishes. The sections have wide ground flanges, which, with rubber band between, form air-tight connection, being held by three metal clamps. This jar may also be used as a desiccator for drying in a current of hydrogen or other gases. Lower section, height, 6 inches; diameter, $5\frac{1}{2}$ inches. See Journal of Applied Microscopy, Vol. II, No. 2. Complete with rubber band and three clamps.....\$15.00

6158 JAR, Culture, Novy's Improved. For plate cultures of anaerobic bacteria by vacuum, gas, or pyrogallate methods. The feature of excellence over other jars is the addition of a stopcock supported horizontally by glass tubes on the regular stopper, which relieves the latter from pressure and allows the vacuum method to be easily employed. Otherwise same as No. 6156. Complete with band and three clamps..... 17.50

6160 Bands of rubber, for culture jars, each, net..... .20

6162 Clamps for above culture jars, each, net..... .75



6164



6166



6168

6164 JARS, Preservation (Lightning).

Capacity, ozs.	16	24	32	64
Each	\$0.15	.18	.20	.25

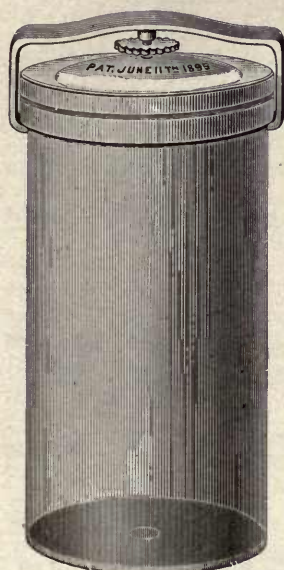
6166 JARS, Preservation, of clear white glass, with metal screw cover.

Capacity, ozs.	4	8	16	32	64
Per doz.	\$1.00	1.40	1.75	2.25	2.75
Each .....	.10	.14	.16	.20	.28

6168 JARS, Specimen, of clear glass, with self-acting clamp. Body and mouth of same diameter, made air tight by means of rubber ring.

Capacity, ounces	4	8	10	16	24
Height, inches	$2\frac{1}{2}$	$3\frac{1}{8}$	$3\frac{3}{4}$	$5\frac{5}{8}$	$4\frac{5}{8}$
Diameter, inches	$2\frac{3}{4}$	3	$3\frac{3}{8}$	$3\frac{1}{8}$	$4\frac{1}{4}$
Per dozen	\$1.00	1.25	1.50	2.00	3.00

- 6170 JARS**, Specimen, made of glass without contraction at the neck, so that the width of the mouth is the same as the inside diameter of the body of the jar. The contents are inclosed entirely in glass with a thin rubber medium under the lid to make a tight joint. The lid is securely fastened down with a metallic clamp. On the under side of the lid are two glass rings, from which specimen may be suspended so that they will stay in any position.



6170

Width of Mouth	Height without lid	Capacity (approx.)	Each
2 $\frac{1}{4}$ inches....	4 inches....	$\frac{1}{2}$ pint.....	\$ 1.05
2 $\frac{1}{4}$ inches....	6 inches....	$\frac{3}{4}$ pint.....	1.10
2 $\frac{1}{4}$ inches....	8 inches....	1 pint.....	1.20
2 $\frac{1}{4}$ inches....	12 inches....	1 $\frac{1}{2}$ pints.....	1.35
2 $\frac{1}{4}$ inches....	18 inches....	2 $\frac{1}{4}$ pints.....	1.50
3 $\frac{1}{2}$ inches....	6 inches....	1 $\frac{1}{4}$ pints.....	1.55
3 $\frac{1}{2}$ inches....	8 inches....	2 $\frac{1}{2}$ pints.....	1.70
3 $\frac{1}{2}$ inches....	12 inches....	4 pints.....	2.00
3 $\frac{1}{2}$ inches....	18 inches....	6 pints.....	2.40
5 inches....	8 inches....	2 $\frac{3}{4}$ quarts.....	3.00
5 inches....	12 inches....	4 quarts.....	3.10
5 inches....	15 inches....	5 quarts.....	3.80
5 inches....	18 inches....	6 quarts.....	4.10
6 $\frac{1}{4}$ inches....	8 inches....	1 gallon.....	3.90
6 $\frac{1}{4}$ inches....	12 inches....	1 $\frac{1}{2}$ gallons.....	4.35
7 $\frac{5}{8}$ inches....	6 inches....	1 $\frac{1}{8}$ gallons.....	5.55
7 $\frac{5}{8}$ inches....	8 inches....	1 $\frac{1}{2}$ gallons.....	6.00
7 $\frac{5}{8}$ inches....	12 inches....	2 $\frac{1}{4}$ gallons.....	6.80
7 $\frac{5}{8}$ inches....	15 inches....	2 $\frac{3}{4}$ gallons.....	7.50
7 $\frac{5}{8}$ inches....	18 inches....	3 $\frac{1}{2}$ gallons.....	8.00
7 $\frac{5}{8}$ inches....	24 inches....	4 $\frac{1}{2}$ gallons.....	9.25
7 $\frac{5}{8}$ inches....	36 inches....	7 gallons.....	12.00
11 $\frac{1}{2}$ inches....	12 inches....	4 $\frac{3}{4}$ gallons.....	14.25
11 $\frac{1}{2}$ inches....	18 inches....	7 $\frac{1}{4}$ gallons.....	18.00
11 $\frac{1}{2}$ inches....	24 inches....	10 gallons.....	22.50

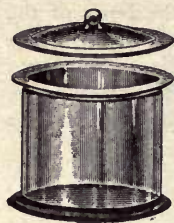
- 6172 JARS**, Specimen, made of clearest flint glass, with mouths nearly as wide as the jars themselves, and glass stoppers carefully ground in.

In ordering give Diameter of Body and Height to shoulder.



6172

Diameter of body	Height to shoulder	Height to top of stopper	Width of mouth	Capacity to neck	Each
1 $\frac{1}{2}$ inches..	2 inches..	3 $\frac{1}{2}$ inches..	1 $\frac{1}{4}$ inches..	1 $\frac{1}{2}$ ounces..	\$0.45
1 $\frac{1}{2}$ inches..	3 inches..	4 $\frac{1}{2}$ inches..	1 $\frac{1}{4}$ inches..	2 $\frac{1}{2}$ ounces..	.50
2 inches..	2 $\frac{1}{2}$ inches..	4 $\frac{1}{4}$ inches..	1 $\frac{1}{2}$ inches..	3 $\frac{1}{2}$ ounces..	.55
2 inches..	3 $\frac{3}{4}$ inches..	5 $\frac{1}{2}$ inches..	1 $\frac{1}{2}$ inches..	5 ounces..	.60
2 inches..	5 inches..	6 $\frac{3}{4}$ inches..	1 $\frac{1}{2}$ inches..	7 ounces..	.65
2 $\frac{1}{2}$ inches..	3 $\frac{1}{2}$ inches..	5 $\frac{1}{2}$ inches..	2 inches..	8 ounces..	.70
2 $\frac{1}{2}$ inches..	5 inches..	7 inches..	2 inches..	11 ounces..	.75
2 $\frac{1}{2}$ inches..	7 inches..	9 inches..	2 inches..	16 ounces..	.80
3 inches..	4 inches..	6 $\frac{1}{4}$ inches..	2 $\frac{1}{2}$ inches..	12 ounces..	.90
3 inches..	6 inches..	8 $\frac{1}{4}$ inches..	2 $\frac{1}{2}$ inches..	20 ounces..	.95
3 inches..	8 inches..	10 $\frac{1}{4}$ inches..	2 $\frac{1}{2}$ inches..	28 ounces..	1.20
3 $\frac{3}{4}$ inches..	6 inches..	8 $\frac{1}{2}$ inches..	3 inches..	32 ounces..	1.25
3 $\frac{3}{4}$ inches..	8 inches..	10 $\frac{1}{2}$ inches..	3 inches..	40 ounces..	1.55
3 $\frac{3}{4}$ inches..	10 inches..	12 $\frac{1}{2}$ inches..	3 inches..	56 ounces..	1.80
4 $\frac{1}{2}$ inches..	5 inches..	7 $\frac{3}{4}$ inches..	3 $\frac{1}{2}$ inches..	40 ounces..	1.65
4 $\frac{1}{2}$ inches..	8 inches..	10 $\frac{3}{4}$ inches..	3 $\frac{1}{2}$ inches..	64 ounces..	1.95
4 $\frac{1}{2}$ inches..	12 inches..	14 $\frac{3}{4}$ inches..	3 $\frac{1}{2}$ inches..	92 ounces..	2.40
6 inches..	7 inches..	10 inches..	5 inches..	100 ounces..	2.85
6 inches..	10 inches..	13 inches..	5 inches..	144 ounces..	3.75
6 inches..	12 inches..	15 inches..	5 inches..	168 ounces..	4.05
6 inches..	15 inches..	18 inches..	5 inches..	212 ounces..	4.60



6174



6176



6178

6174 JARS, Specimen, of best glass, with foot and ground in air tight stoppers. Mouth of same diameter as the body of the jar.

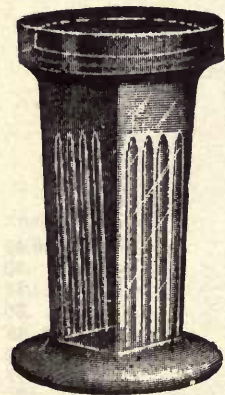
Height, ctm.	10	14	16	20	26	30
Diameter, ctm.	9	12	13	15	18	20
Each	\$1.00	1.75	2.25	3.00	6.75	10.50

6176 JARS, Specimen, Rectangular, with flat ground on lids for permanent sealing of heavy, clear flint glass, the wide faces ground and polished.

Inside Height, ctm.	10	12	15	18
Inside Width, ctm.	8	10	12	16
Inside Depth, ctm.	5	5	6	6
Each	\$1.80	2.50	3.40	4.00
Inside Height, ctm.	20	23	26	31
Inside Width, ctm.	10	13	10	17
Inside Depth, ctm.	6	7	6	7
Each	\$4.00	4.50	4.50	6.50

6178 SPECIMEN BOTTLES. Bent neck, for insects.

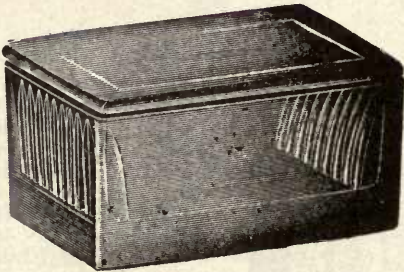
Size	Small	Medium	Large
Capacity, oz.	1/2	1	2
Each	\$0.50	.75	1.00



6180



CROSS-SECTION
SHOWING SLIDES
IN POSITION



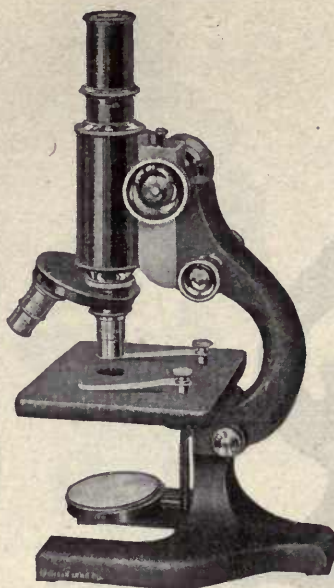
6182

6180 JARS, Staining Dish. Of heavy, clear white glass, with cover. Requires very little fluid and the slides are easily introduced and removed. Inside dimensions are 3x3 1/2 inches, yet 20 slides can be treated at one time. . \$0.35

6182 JARS, Staining, Coplin's for holding 10 slides; very convenient for the manipulation of sections attached to slides, with ground on cover. Each.... .50

6184 LENS PAPER, in sheets of 27x37 ctm., in packages of 50 sheets, per package

.50



6186

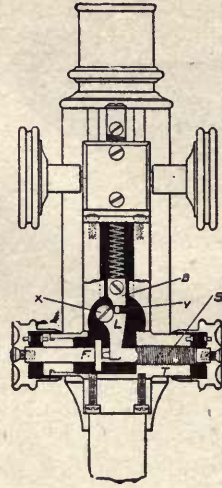
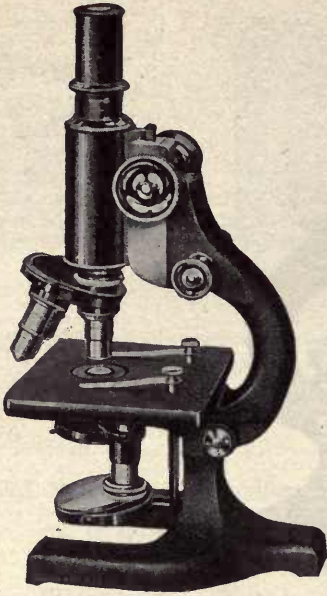
6186 MICROSCOPE—Spencer Lens Co. No. 64. This microscope has proven a standard of its own. It is exceedingly desirable for general biology and is in daily use in hundreds of laboratories.

The Body Tube is our standard, 37 m.m. in diameter, taking standard objectives and oculars.

The Arm and its Side Fine Adjustment "D" are identical with Microscope No. 44. This adjustment is patented, is exceedingly durable, will withstand very hard usage and not develop lost motion. (See description and diagram illustration under No. 44.) It travels laterally, giving an instant visible index of the position of the adjustment relative to the total excursion. Steel pins in heads of buttons produce an absolute stop at either end of excursion, preventing jamming or binding of screw. There are but two bearing surfaces and three working parts. The main bearing is made of one single piece. One revolution moves the tube .2 mm. Adjustment ceases to work when objective comes in contact with slide.

The Stage, 112x108 mm., is completely covered with vulcanite rubber, vulcanized directly to the stage plate. Beneath the stage is an iris diaphragm operated by a knurled wheel, 62 mm. in diameter. Abbe Condenser is supplied when ordered, and is fitted in a simple, spiral focusing substage ring. Distance is 80 mm. from optical center to arm. Furnished in hardwood cabinet, lock and key.

Nosepiece	Achromatic Objectives Equiv. Foc. mm.	Huyghenian Oculars	Price
A.....	16, 4	10x	\$36.00
B..... Double	16, 4	10x	40.75
C.....	16, 4	6x, 10x	37.75
D..... Double	16, 4	6x, 10x	42.50



6188

6188 MICROSCOPE, Spencer Lens Co., No. 44-H. This instrument has proven the most popular of all Spencer Microscopes. Many hundred are in daily use, in medical and general laboratories, also by physicians. This, we believe, is the best microscope value on the market.

The **Body Tube** is standard, taking standard objectives and oculars.

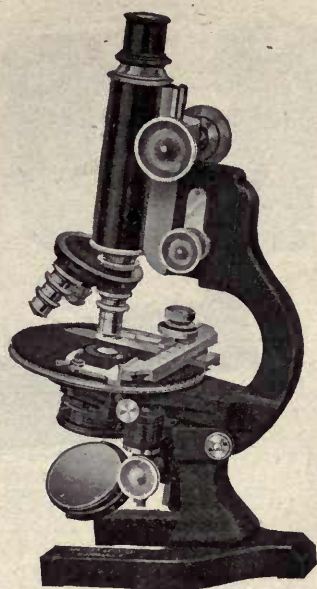
The **Arm** is strong and very graceful, fitted with Side-Fine Adjustment and possessing many exclusive features. It has but two bearing surfaces and three working parts. The patented one-piece construction bearing carries the solid steel screw. This screw, with no less than twenty threads engaged even at the limit of its motion, has a heavy flange, F, working against the level, L. When the screw is turned in such a direction as to carry F forward, the lever is so swung as to raise the body tube. The reverse motion permits the tube to be lowered under the influence of the spring. The focusing buttons at either end of this screw travel laterally and serve as a visible index of the center of the fine adjustment action. Steel pins in the heads form positive stops at either end of the excursion. The direction in focusing is the same with both fine and coarse adjustments. One revolution moves tube .2 mm.

The **Stage**, 112x108 mm., is completely covered with genuine vulcanite rubber, vulcanized directly to the stage plate. Distance is 80 mm. from optical axis to arm.

The **Substage** is standard quick-screw form.

Furnished in hardwood cabinet, lock and key.

Equipped with Huyghenian Oculars 6x and 10x, objectives 16 mm. (2/3"), 4 mm. (1/6"), dry, and 1.8 mm. (1/14") immersion, triple nosepiece, quick-screw substage, Abbe Condenser N. A. 1.20 with iris diaphragm. Complete in cabinet.....\$90.00



6190

6190 MICROSCOPE, Spencer Lens Co. No. 15

This microscope is a very high grade instrument.

The **Body Tube** is standard size, taking standard objectives and oculars.

The **Arm** is large enough to comfortably grasp same with the whole hand. It is fitted with Fine Adjustment "B," which is very durable, automatically taking up wear. There is **no lost motion**. The button is graduated with 100 divisions, giving a reading of single microns. One revolution moves the body tube .1 mm.

The **Revolving Stage**, 120 mm. diameter, is covered with vulcanite and centered by means of centering screws. The distance from optical center to arm is 90 mm. This stage with—

The **Mechanical Stage** is in reality two stages in one. The lateral movement is 60 mm. and the to-and-fro excursion, 38 mm.

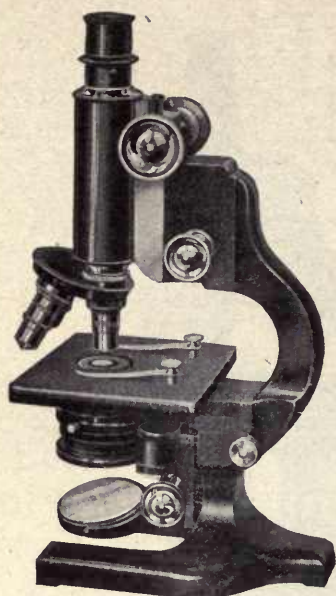
Rack-and-Pinion Substage, complete, equipped with Wide Angle Condenser. The 150 mm diameter mechanical stage, identical with circular vernier, may be substituted for the one regularly supplied at \$10.00 additional.

The plain revolving stage, 120 mm. diameter, may be substituted at a reduction of \$20.00 from prices below.

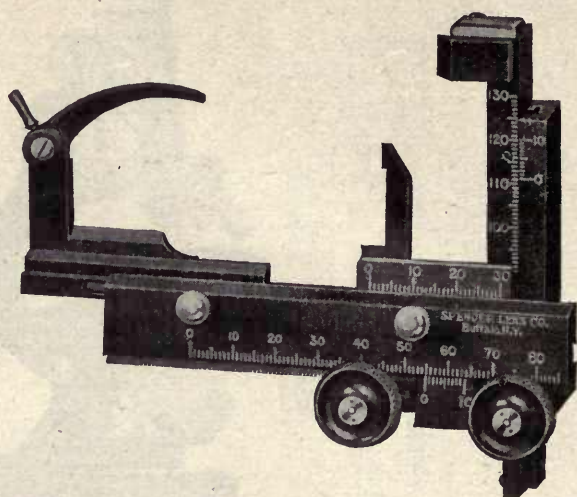
The cabinet is polished mahogany, lock and key.

Wide Angle Condenser	Nose piece	Objectives Equiv. Foc. mm.	Achromatic Outfits	
			Huyghenian Oculars	Price
N. A. 1.40	Triple	16, 4, 1.8 Oil-imm.	6x, 10x	\$160.00

150 mm. diameter—mechanical stage—described in text above,
 Additional **\$10.00**
 120 mm. diameter—plain stage—described in text above. Deduct.... **20.00**



6192



6194

6192 MICROSCOPE, Spencer Lens Co. No. 18.

This is a new microscope. It is very high-grade instrument. It is specially recommended for research work and for those who wish the very best equipment, but with a plain, rectangular stage.

No. 18 Microscope is similar to No. 15, excepting the stage.

The Stage, 112x108 mm., is completely covered with vulcanite rubber, vulcanized directly to the stage plate. The distance from optical center to arm is 90 mm.

The Body Tube is standard size, 37 mm. diameter, taking standard objectives and oculars.

The Arm is large and may easily be grasped with the whole hand. It is fitted with Fine Adjustment "B," which is very durable. It automatically takes up wear and there is **no lost motion**. The focusing button is graduated with 100 divisions giving a reading of single microns.

Rack-and-Pinion Substage, complete, and equipped with Wide Angle Condenser.

The cabinet is polished mahogany, lock and key.

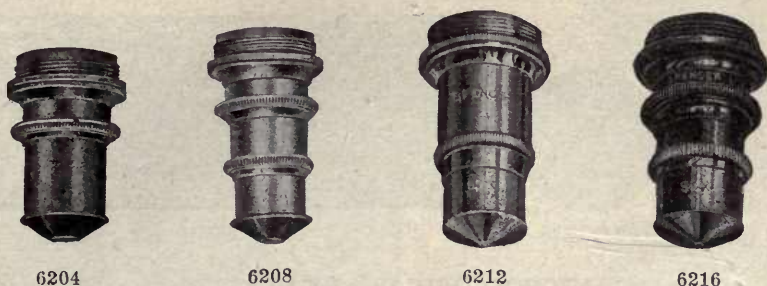
Wide Angle Condenser	Nosepiece	Objectives, Equiv. Foc. mm.	Achromatic Outfits	
			Huyghenian Oculars	Price
N. A. 1.40	Triple	16, 4, 1.8 Oil-imm.	6x, 10x	\$120.00

6194 MECHANICAL STAGE, Spencer Lens Co. The most popular mechanical stage yet produced; attachable to any modern square staged microscope.

A stop at the front always insures its return to the same position on the microscope stage. Should work be interrupted and the mechanical stage be removed, when replaced, the object of interest may readily be found, providing the vernier readings have been noted. The vernier of the lateral movement is placed slightly to one side of the arm of the microscope where it may easily be read.

The movements are by diagonal rack and pinion, and are firm and reliable, permitting the most delicate adjustments. The range of movement is ample to cover the entire area of the standard slide, 1x3 inches.

Finished in alcohol-proof black enamel, complete in cabinet.....**\$19.00**



Spencer Achromatic Objectives

Catalog No.	Equivalent Focus		Num. Aperture	Working Distance	Diam. of the real field	Price
	mm.	inches approx.		With 160 mm. tube length and 10x eyepiece mm.	mm.	Fixed Mount.
6196	48	2	0.10	28.0	6.5	\$4.75
6198	32	1 $\frac{3}{8}$	0.10	15.0	4.7	4.75
6200	25	1	0.25	9.5	3.3	6.00
6204	16	2/3	0.25	5.0	2.1	6.00
6206	8	1/3	0.50	1.5	1.0	9.75
6208	4	1/6	0.70	0.6		9.75
6210	4	1/6	0.85	0.46	0.40	9.75
6212	1.8	1/14	1.25	9.13	0.20	32.50
6214	Oil-Im. 1.5	1/16	1.25	0.10	0.14	50.00
	Fluorite	Objective	2 mm.	Oil-Imm.		
6216	2	1/12	1.25	0.17	0.16	56.00
	Oil-Im.					
6218 Huyghenian Oculars		Power	Equivalent Focus		Price	
		4x	62 5 mm.—2 $\frac{1}{2}$ in.		\$1.75	
		5x	50 mm.—2 in.		1.75	
		6x	40 mm.—1 $\frac{3}{5}$ in.		1.75	
		8x	30 mm.—1 $\frac{1}{5}$ in.		1.75	
		10x	25 mm.—1 in.		1.75	
		12x	20 mm.— $\frac{4}{5}$ in.		1.75	
6220 Orthoscopic Oculars		Power	Equivalent Focus		Price	
		8x	30 mm.—1 $\frac{1}{5}$ in.		\$5.00	
		10x	25 mm.—1 in.		5.00	
		12x	20 mm.— $\frac{4}{5}$ in.		5.00	
		15x	16 mm.— $\frac{2}{3}$ in.		5.00	
		20x	12 mm.— $\frac{1}{2}$ in.		5.00	



6222

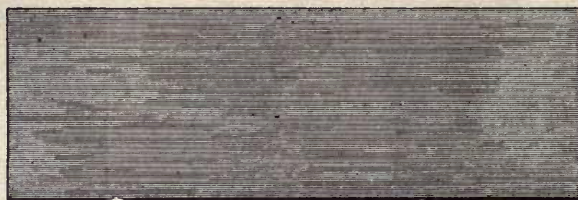
6222 DARK FIELD ILLUMINATOR. The construction of this illuminator is such that it can be used on any microscope. The condenser is mounted in a solid piece of brass with slots at the end for the stage clips of the microscope. The illuminator being held in this way permits the use of ordinary slides on the top surface. In case.....\$10.00



6224-6230



6232-6238



6280

MICROSCOPIC COVER GLASSES

	Shape	Thickness	*Dimensions	Price per oz.
6224	Squares	No. 0—Selected, extra thin	15, 18, 22 or 25 mm.	\$2.50
6226	Squares	No. 1—0.13 to 0.17 mm.	15, 18, 22 or 25 mm.	2.00
6228	Squares	No. 2—0.17 to 0.25 mm.	15, 18, 22 or 25 mm.	1.50
6230	Squares	No. 3—0.25 to 0.50 mm.	15, 18, 22 or 25 mm.	1.00
6232	Circles	No. 0—Selected, extra thin	15, 18, 22 or 25 mm.	2.75
6234	Circles	No. 1—0.13 to 0.17 mm.	15, 18, 22 or 25 mm.	2.25
6236	Circles	No. 2—0.17 to 0.25 mm.	15, 18, 22 or 25 mm.	1.75
6238	Circles	No. 3—0.25 to 0.50 mm.	15, 18, 22 or 25 mm.	1.25

*Always designate size wanted with catalog number.

RECTANGULAR COVER GLASSES

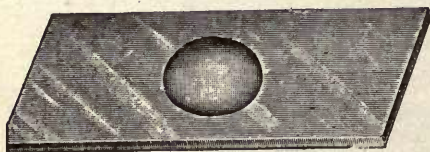
	No. 1	Approx. No. per oz.	Per oz.		No. 2	Approx. No. per oz.	Per oz.
6240	22x30 mm.	120		6260	22x30 mm.	90	
6242	22x40 mm.	106		6262	22x40 mm.	65	
6244	22x50 mm.	75		6264	22x50 mm.	62	
6246	22x60 mm.	65		6266	22x60 mm.	48	
6248	22x70 mm.	54		6268	22x70 mm.	46	
6250	24x30 mm.	110		6270	24x30 mm.	86	
6252	24x40 mm.	100		6272	24x40 mm.	62	
6254	24x50 mm.	70		6274	24x50 mm.	60	
6256	24x60 mm.	54		6276	24x60 mm.	40	
6258	24x70 mm.	50		6278	24x70 mm.	38	

\$3.00
per
oz.

\$2.50
per
oz.

MICROSCOPIC SLIDES; free from defects in the glass. The surfaces are plane, so that the slide lies flat upon the stage. Edges well ground.

6280	SLIDES, 75x25 mm. (3x1 inch) medium thickness, per gross.....	\$1.50
6282	SLIDES, 75x25 mm. (3x1 inch) extra thin, per gross.....	2.00
6284	SLIDES, 75x38 mm. (3x1½ inch) medium thickness, per gross.....	2.00
6286	SLIDES, 75x50 mm. (3x2 inches) medium thickness, per gross.....	3.50

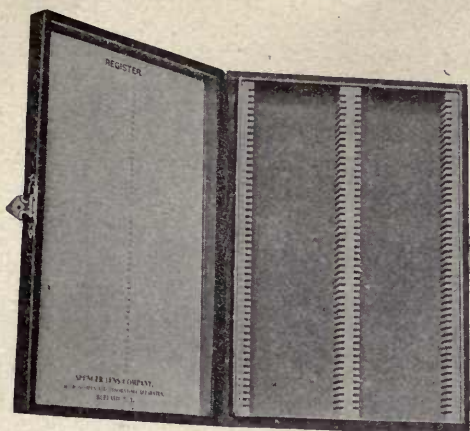


6288



6294

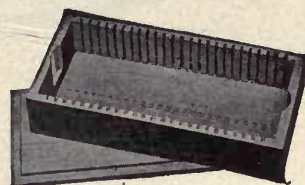
6288	SLIDES, 75x25 mm. (3x1 inch) one concave center, per dozen.....	\$0.75
6390	SLIDES, 75x25 mm. (3x1 inch) two concave centers, per dozen.....	1.25
6292	SLIDES, 75x25 mm. (3x1 inch) three concave centers, per dozen.....	1.75
6294	SLIDES, 75x25 mm. (3x1 inch), drop culture, cavity, 16 mm. diameter and 2 mm. deep, in polished plate glass, each.....	.50



6296

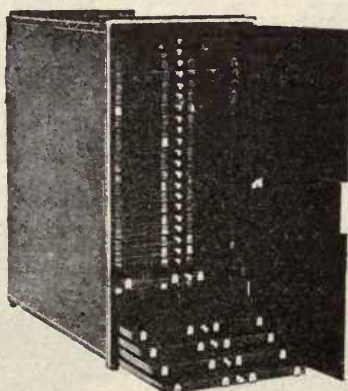


6300



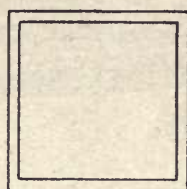
6302

- 6296 MICROSCOPIC SLIDE BOX**, grooved to hold one hundred object slides, 25x75 mm., covered with a dark-brown cloth, hinged cover and two catches. Price\$0.75
- 6298 MICROSCOPIC SLIDE BOX**, same as No. 6296, but grooved to hold but thirty slides. These boxes are especially desirable where it is necessary to keep objects which are constantly used in a secure and handy receptacles. Price50
- 6300 MICROSCOPIC SLIDE BOXES**, made of white wood, with cover so arranged that when removed, the ends of the slides are exposed so that they can be easily removed. Grooved to hold twenty-five objects size 25x75 mm., numbered and indexed, per ten..... 1.00
- 6302 MICROSCOPIC SLIDE BOXES**, made of white wood, with closely fitting covers. Grooved to hold twenty-five objects, 25x75 mm., numbered and indexed, per ten..... 1.00
- 6304 MICROSCOPIC SLIDE BOXES**, same as No. 6302, but grooved to hold twelve objects, size of slide 25x75 mm., numbered and indexed, per ten75
- 6306 MICROSCOPIC SLIDE BOXES**, same as No. 6302, grooved to hold twenty-five objects, size of slide 50x75 mm., per ten..... 2.00
- 6308 MICROSCOPIC SLIDE TRAYS**, map form, to hold fourteen slides, each.. .40
- 6310 MICROSCOPIC SLIDE TRAYS**, map form, to hold twenty slides, each.... .50
- 6312 MICROSCOPIC SLIDE MAILING CASES**, tops, middles or bottoms, per dozen25

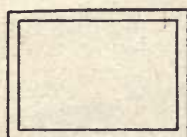


6314

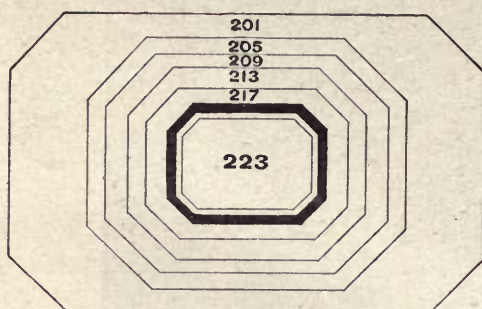
- 6314 MICROSCOPIC CABINET**, Minot's Metal Cabinet. This cabinet, designed by Dr. Chas. S. Minot, is very compact, occupying much less space than a wooden cabinet and affording better protection against fire. It is strongly made of metal throughout, neatly finished on the outside in maroon-colored japan with bronze stripes. The inside finish is in black japan. It contains thirty japanned metal trays, each holding twenty-four glass slides, 75x25 mm. The trays are provided with convenient knobs and with card holders. The new, improved construction of the trays holds each slide independently in its place, preventing shaking or slipping of slides when trays are removed. The cabinet is furnished with a good brass lock, and measures 36.5 cm. in height, 32.5 cm. in depth, and 17.5 cm. in width, outside. Capacity seven hundred and twenty slides.
Price, complete, with 30 trays, each.....\$30.00



6316



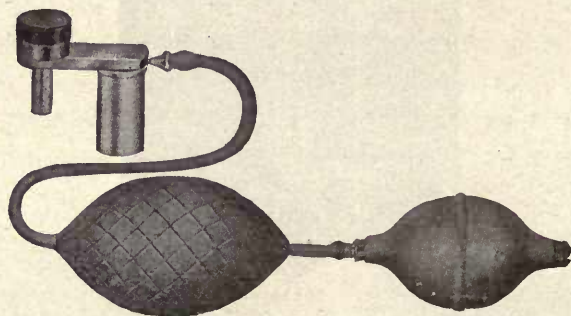
6318



6326-6332

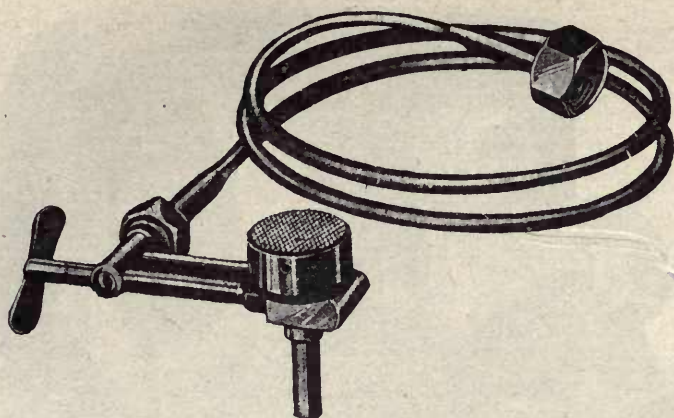
Best White Paper, Gummed, Black Border, for Microscope Slides. 100 in a Box.

- 6316 MICROSCOPIC LABELS, 22 mm. square, per 100, 10c; per 1,000.....\$.75
- 6318 MICROSCOPIC LABELS, 22 mm. x 15 mm., per 100, 10c; per 1,000..... .75
- 6320 MICROSCOPIC LABELS, like No. 6316, in books of 500 labels, each..... .50
- 6322 MICROSCOPIC LABELS, printed like No. 6316 or No. 6318, with two lines of printing in blue or red, in lots of 12,000, per lot..... 10.00
- 6324 MICROSCOPIC LABELS, printed same as No. 6322, but in black, in lots of 12,000, per lot..... 10.00
- We can make these rates on lots of 12,000, because this quantity can be printed at one time most economically. Smaller quantities will cost much more proportionately. We can furnish labels without borders if desired. In ordering, be sure to send sample or clear copy, and state shape, and color of ink wanted.
- 6326 MICROSCOPIC LABELS, red border, oblong, 23x30 mm., 100 in a box, per 100, 10c; per 1,000..... .75
- 6328 MICROSCOPIC LABELS, red border, oblong, 27x37 mm., 100 in a box, per 100, 10c; per 1,000..... .75
- 6330 MICROSCOPIC LABELS, red border, oblong, 35x45 mm., 100 in a box, per 100, 10c; per 1,000..... .75
- 6332 MICROSCOPIC LABELS, red border, oblong, 40x65 mm., 100 in a box, per 100, 10c; per 1,000..... .75



6334

- 6334 MICROTOME, Ether Freezing Attachment, Spencer Lens Co. This freezing attachment consists of a freezing chamber of hard rubber which so prevents the radiation of the cold that the tissue is quickly frozen. It will freeze tissue, 15 mm. in diameter and 3 mm. thick, in one minute, using only 5 cc. of ether. The ether is held in the metal tank, which for filling may be unscrewed from the support from which it is suspended. Any excess of ether which does not evaporate is drained back into the metal chamber from which it came. There are no bottles or entangling tubes and no waste of ether. It is simple, compact and efficient. It can be used on any sliding microtome.....\$7.50

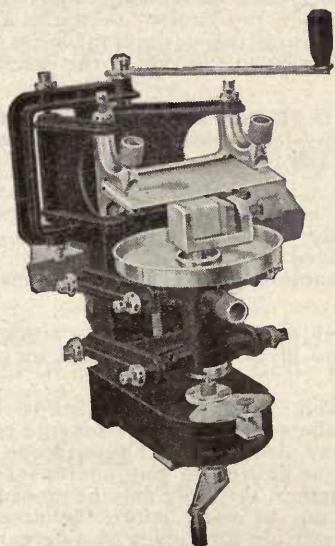


6336

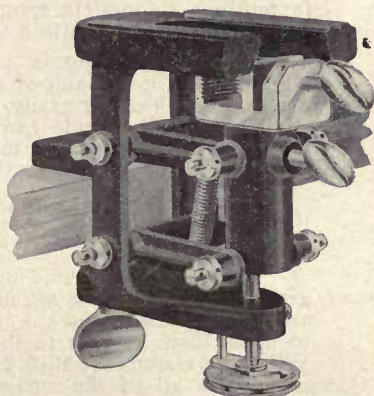
6336 MICROTOME Freezing Attachment, for use with Carbonic Acid.

The superior qualities of this freezing chamber have been well recognized during the past ten years. It is substantially made, easy to operate and eminently efficient. There is a hard rubber non-conducting ring (the suggestion of Dr. L. D. Wilson of St. Mary's Hospital, Rochester, Minn.) between the corrugated plate to which the object is frozen and the rest of the apparatus. This prevents the conduction of the cold from the specimen to the other parts, thus saving time and gas.

This freezing attachment may be used with Microtomes Nos. 6338 and 40. Complete, with copper tube connections.....**\$10.00**



6338



6340

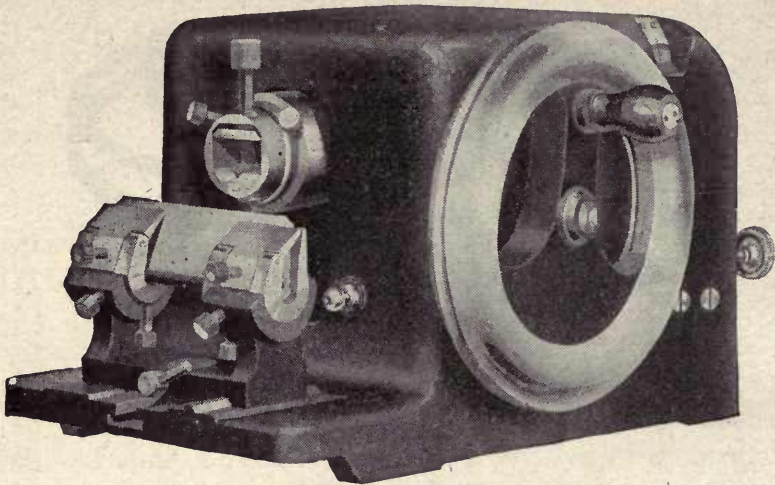
6338 MICROTOME, Automatic, Spencer Lens Co. An excellent instrument for cutting celluloidin or frozen sections, may also be used for paraffine sections and can be adjusted for any thickness of cut.

This peculiar motion of the knife makes this microtome especially desirable for cutting frozen sections, and when used with our CO₂ freezing chamber it has no equal. Sections may be cut, stained and mounted in one and one-half minutes from the time the tissue is placed on the freezing plate. Without Freezing Attachment, with one knife.....**\$45.00**

6340 MICROTOME Table, Spencer Lens Co. For sectioning with Hand Knife, running on glass traveling ways.

This instrument may be used with freezing attachment No. 6334 or No. 6336.

Without knife**\$12.50**



6342

6342 MICROTOME—Spencer Lens Co., No. 820. The Spencer Rotary Microtome is an original construction. It is intended for the most accurate and careful work. An inclined plane feed, which is independent of the up-and-down movement on the perpendicular support, overcomes the inaccuracies inherent in other rotary microtomes. The most important element in a microtome is an accurate and reliable feed mechanism. This, and rigidity, are vital. These points are paramount in this instrument.

The feed is so arranged that it can be set for sections of any thickness, from 1 micron to 60 microns, by turning the knurled button at the back of the case until the number representing the desired thickness appears opposite the indicator at the small opening in the side of the case near the balance wheel.

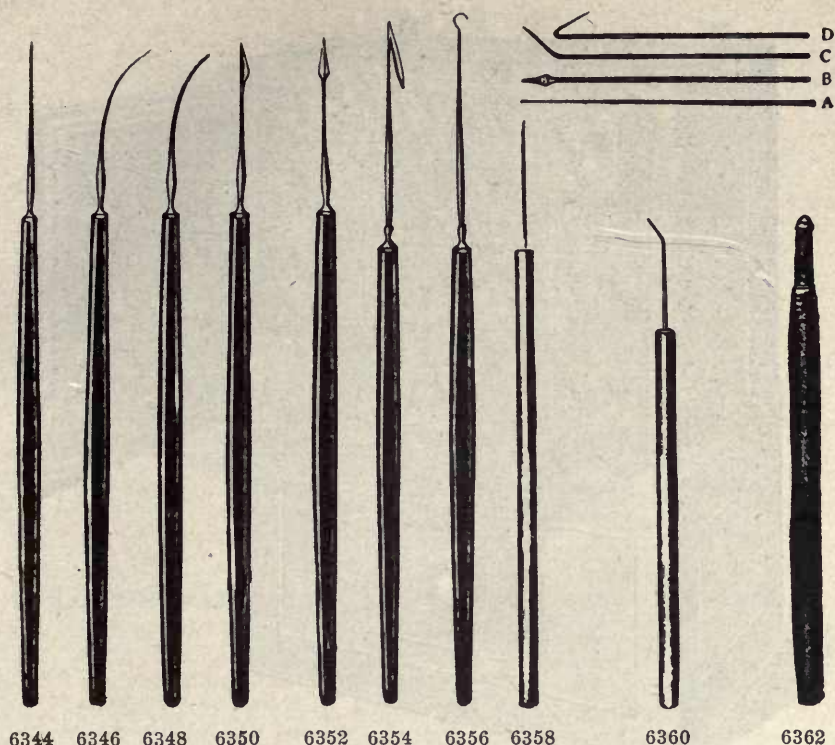
The total excursion of the feed is 37 mm., allowing a sufficient range for cutting a complete series of a very large object without the necessity of a break due to resetting the knife and feed mechanism.

The object clamp is a part of a ball which fits into its socket so uniquely that it is clamped as solidly as though it and its socket were one piece. The object is easily, accurately and delicately oriented to any desired angle. The angle can be changed in any plane without interfering with any angle already attained in another plane. The object may easily be rotated.

The up-and-down stroke of the object clamp is 50 mm., which permits the cutting of very large sections and gives sufficient stroke for celloidin cutting.

The knife is fastened by two clamps, each of which clamps the knife at the back and along $1\frac{1}{4}$ inches of the edge as well. It may be turned to any desired angle, and the clamps may also be moved toward one another to bring them as near to the ribbon as desired to gain additional rigidity. When the clamps are thus drawn together, the knife may be moved so that practically all of the cutting edge can be used before the necessity of resharpening. The adjusting screws provide for knives of different widths. The balance wheel is grooved, so that the instrument may be run by a motor.

Spencer Rotary Microtome, with one knife, handle and back for sharpening, and with three object discs.....	\$130.00
Knife holder for celloidin sections.....extra,	15.00
Knife for paraffin sections.....extra,	7.00
Knife for celloidin sections .....extra,	7.00
Adjustable knife holder, permits entire block carrying knife to be shifted sideways, $1\frac{1}{2}$ inches (3 inches in all) either way from center .....extra,	10.00
Table with motor, and speed regulator enclosed for 110-volt direct current .....extra,	75.00
Same for 220-volt direct current.....extra,	90.00

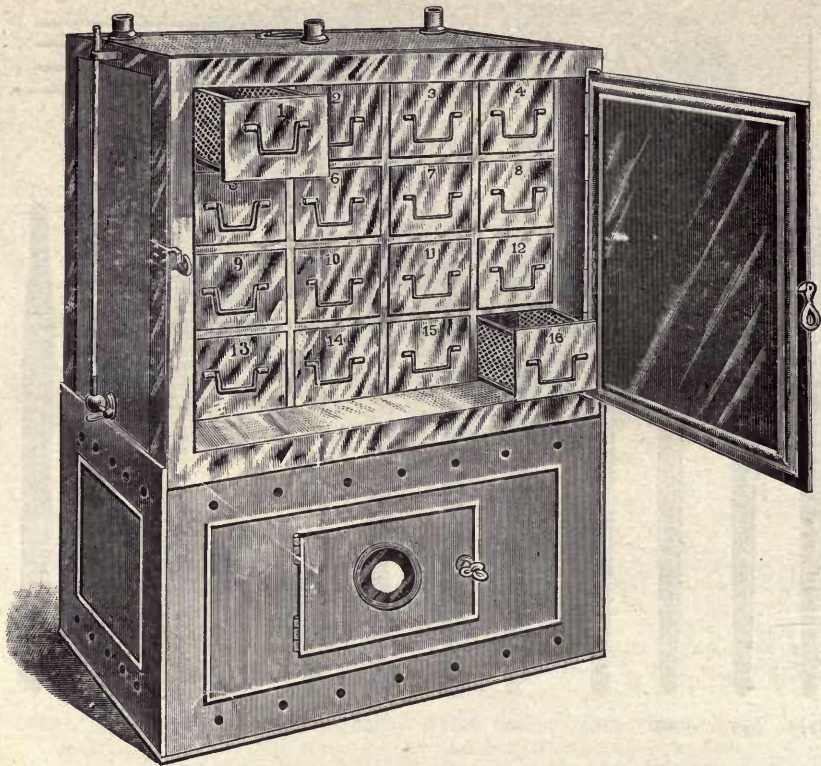
**NEEDLES, Dissecting.** Made of knife steel, with ebony handle.

	Description	Length, inches	Each
6344	Straight, sharp	5¼	\$0.50
6346	Curved, sharp	5	.50
6348	Curved, blunt	5	.50
6350	Spear, single cutting edge.....	5	.60
6352	Spear, double cutting edge.....	5	.60
6354	Harpoon, two cutting edges.....	5¾	.75
6356	Hook, fine and delicate.....	5¾	.60
6358	NEEDLES, Dissecting. Straight, in cedar wood handle. Per dozen.....		.75
6360	NEEDLES, Dissecting. Bent. Per dozen.....		.75
6362	NEEDLE Holders, with bone handle and nicked, adjustable clamp holding any size needle. The steel needles illustrated, No. 6364 are recommended.		
	Length, inches.....	3½	4½
	Each	\$0.15	.25
6364	NEEDLES. For above holders. O steel; length, 2 inches.		
	Style	A B C D	
	Per dozen	\$0.25 .25 .25 .25	



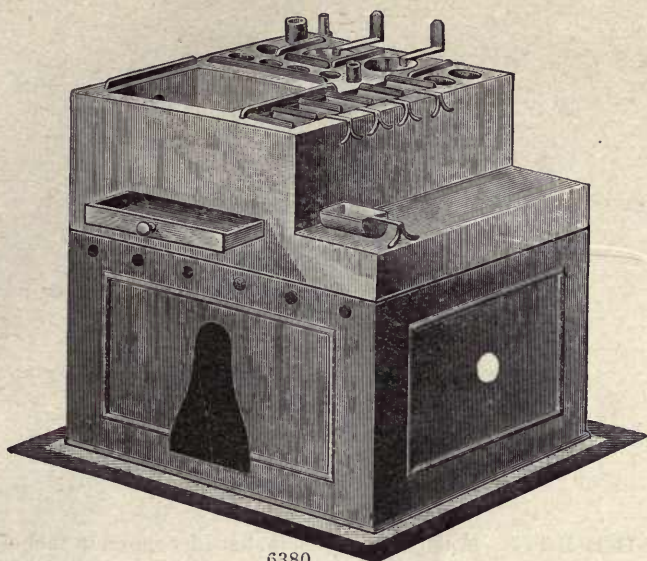
6370

6366	NEEDLE, Platinum Inoculating, in glass handles, of No. 27 wire.....	.75
6368	NEEDLE, Platinum Inoculating, in glass handles, of No. 24 wire.....	1.00
6370	NEEDLE, Platinum Inoculating, removably set in metal handle by screw chuck, complete with 3 inches of platinum wire, No. 27.....	1.00
6372	NEEDLE Holder, as above, without platinum wire.....	.75



6374

- 6374** **PARAFFINE OVEN**, Dr. Lillie, of polished copper, having three walls and covered with an insulating material. Provided with drawers, which are numbered, size 10 inches long, 4 inches wide and $3\frac{1}{4}$ inches deep. The sides and back being perforated zinc, allow circulation of heat from the top to the bottom of the chamber. The fronts of the drawers are of copper, with drop handles; also provided with water gauge, stop-cock and tubulations for thermometer and thermo-regulator. A complete water bath for general laboratory work. The enclosed sheet iron base is $10\frac{1}{2}$ inches high. Eight drawers. Outside dimensions, $13\frac{1}{2}$ inches wide, $19\frac{1}{2}$ inches high, 14 inches deep.....\$ 90.00
- 6374(a)** **PARAFFINE OVEN**, same, Electrically-heated..... 150.00
- 6378** **PARAFFINE OVEN**, 16 drawers. Outside dimensions, $22\frac{1}{2}$ inches wide, $19\frac{1}{2}$ inches high, 14 inches deep..... 125.00
- 6376(a)** **PARAFFINE OVEN**, same, Electrically-heated..... 175.00
- 6378** **PARAFFINE OVEN**, 24 drawers. Outside dimensions, 26 inches wide, 28 inches high, 15 inches deep..... 150.00
- 6378(a)** **PARAFFINE OVEN**, same, Electrically-heated..... 200.00

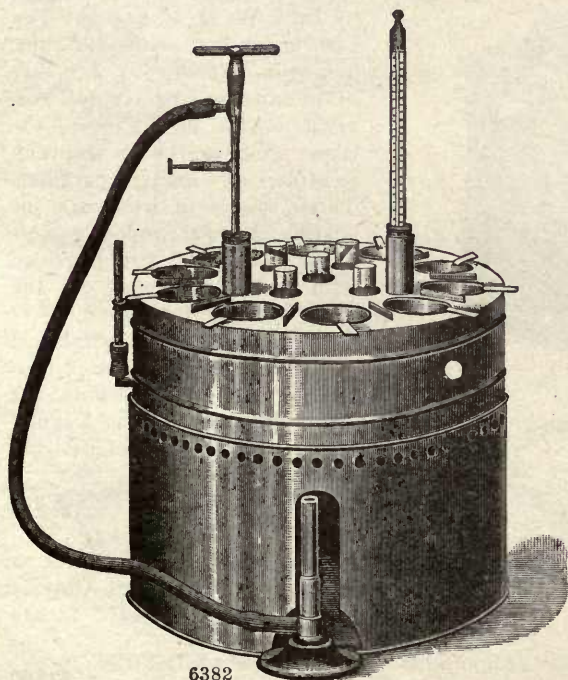


6380

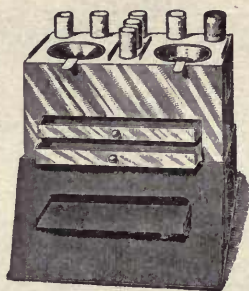
- 6380 PARAFFINE BATH**, Naples, made of polished copper, 12 inches long, 9 inches wide and 5 inches high, including a sheet iron base 13 inches high. The Bath is provided with two nickel-plated cups, one of them $2\frac{1}{8}$ inches diameter by $1\frac{1}{2}$ inches deep, and the other $2\frac{1}{8}$ inches diameter by $\frac{3}{4}$ inch deep, watch glass shape; also five imbedding pans with supports to prevent overturning and seven tubes for vials, $1\frac{3}{4}$ inches deep, two are $\frac{5}{8}$ inch, two $\frac{7}{8}$ inch and three 1 inch diameter. Provided with tubulations for thermometer and gas regulator. The imbedding compartment is 5x4x3 inches deep. Under this is a drying chamber with a drawer. The warming table, 9x3 inches, in front of the Bath, is very useful for keeping imbedding pans warm, etc.
 Price\$30.00

- 6382 PARAFFINE BATH** round, made of polished copper, $12\frac{1}{2}$ inches diameter, $3\frac{1}{2}$ inches deep, with sheet iron base, $7\frac{1}{2}$ inches high. There are ten cups, seven being of a deep form and three shallow; provided with five tubulations in the top for glass tubes, and tubulations for thermometer and gas regulator.
 Price\$25.00

- 6382(a) PARAFFINE BATH**, same as above, complete with gas regulator, thermometer, burner and gas tubes.
 Price\$35.00

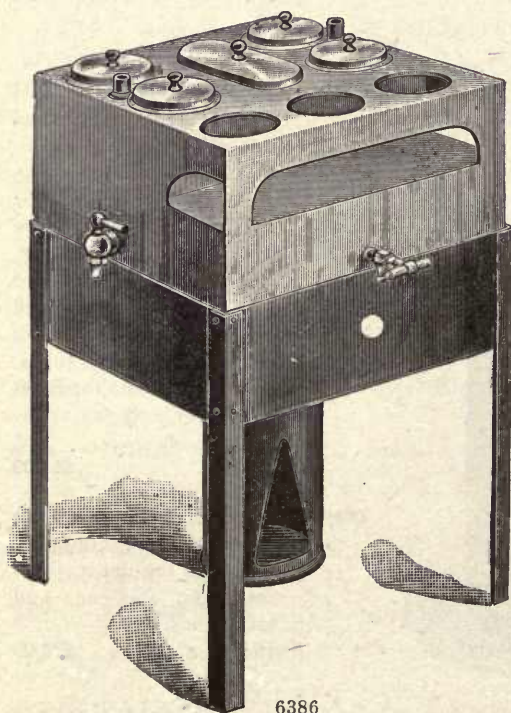


6382



6384

- 6384 PARAFFINE BATH**, Miller's, made of polished copper, 8 inches long, 4 inches wide and 4 inches deep, provided with an extra sheet iron bottom to prevent burning out, and iron base 5 inches high. The Bath has two nickel-plated cups, one shallow and one deep. The shallow cup is $2\frac{1}{8}$ inches diameter and $\frac{3}{4}$ inch deep, watch glass shape, and the deep one is $2\frac{1}{8}$ inches diameter and $1\frac{1}{2}$ inches deep; also provided with two drawers to hold slides and tubulations for thermometer, gas regulator and five test tubes. Price.....\$20.00



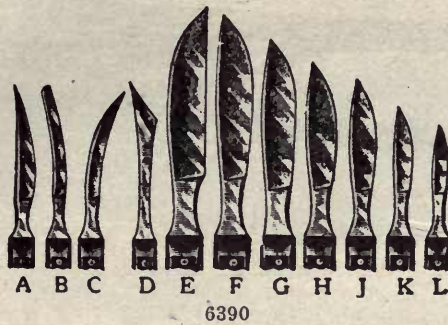
6386

- 6386 PARAFFINE BATH**, designed by Prof. W. M. L. Coplin. The bath is supplied with four cups, 3 inches diameter by 4 inches deep, and one large central reservoir 7x3x4 inches deep, the latter connected with stopcock to draw off melted paraffine. Three spaces in front are for heating material in glass vessels or beakers, etc.; also provided with valve to draw off the water. The iron stand is 17 inches high, and a cylindrical shield for the gas flame is provided; also Tubulations for Thermometer and Gas Regulator. Outside dimensions, 12x12x23 inches high.

Price\$50.00

- 6388 PARAFFINE BATH**. Same as above, but large size. Outside dimensions, 24x12x23 inches high.

Price\$75.00



6390

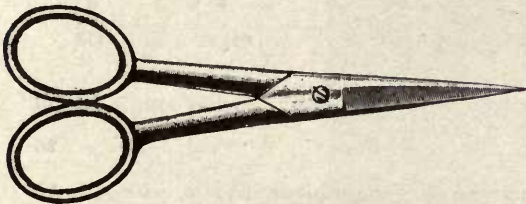
6390 SCALPELS. Of best grade steel, properly tempered to retain a good cutting edge. They are carefully finished in every detail. The all-steel scalpels are easily cleaned and sterilized.

Cutting Edge, inches			Style	Each	Cutting Edge, inches			Style	Each
6390a	.....	1 $\frac{3}{8}$	A	\$0.60	6390g	.....	1 $\frac{3}{8}$	G	\$0.50
6390b	.....	1 $\frac{3}{8}$	B	.60	6390h	.....	1 $\frac{1}{2}$	H	.50
6390c	.....	1 $\frac{3}{8}$	C	.65	6390j	.....	1 $\frac{1}{4}$	J	.50
6390d	.....	$\frac{3}{8}$	D	.65	6390k	.....	1	K	.50
6390e	.....	.2	E	.75	6390l	.....	$\frac{3}{4}$	L	.50
6390f	.....	.2	F	.60					

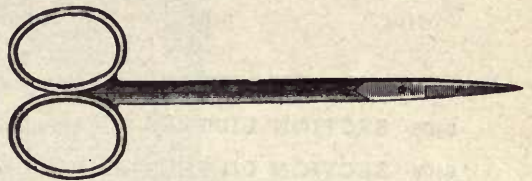


6392

6392 SCALPELS—Cartilage Knives, all steel, with corrugated handles, cutting edge 45 mm.....\$0.50



6394



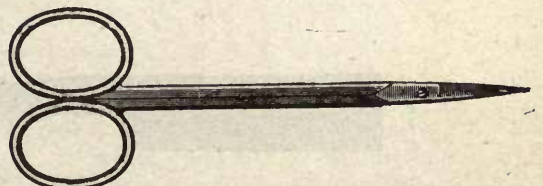
6396

6394 SCISSORS, Dissecting, of good quality steel, nickel plated, medium heavy, 4 $\frac{1}{2}$ inches long.....\$0.50

6396 SCISSORS, Dissecting, extra quality, nickel plated, straight, fine points, 4 $\frac{1}{2}$ inches long60



6398



6400

6398 SCISSORS, Dissecting, as above, points bent at angle, 4 $\frac{1}{2}$ inches long..... .80

6400 SCISSORS, Dissecting, as above, but curved on the flat, 4 $\frac{1}{2}$ inches long.... .80



6402

6402 SCISSORS—Shears, Cartilage, of best steel, with knife shaped plates and lock joint, corrugated handles. Length, 8 inches.....\$4.25



6404



6406



6408



6410



6412



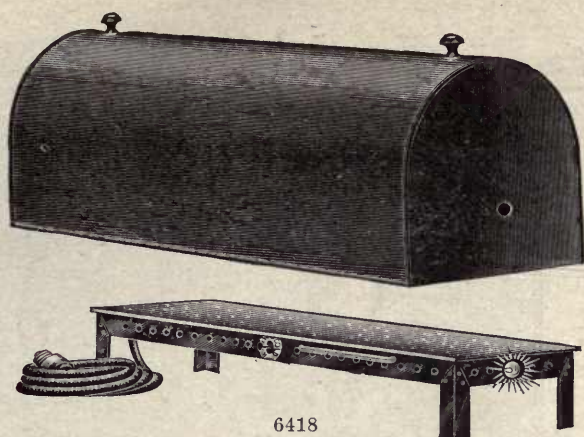
6414

- 6404 SECTION LIFTERS**—Of German silver, with thin blade, 4 inches long....\$0.30
- 6406 SECTION LIFTERS**—Of aluminum, 5½ inches long..... .30
- 6408 SECTION LIFTERS**—In ebony handle, with flexible blade, 12 mm. wide... .50
- 6410 SECTION LIFTERS**—As above, with blade 20 mm. wide..... .50
- 6412 SECTION LIFTERS**—As above, with blade 38 mm. wide..... .60
- 6414 SECTION LIFTERS**—In ebony handle with concave perforated bowl 18 mm. diameter 1.50



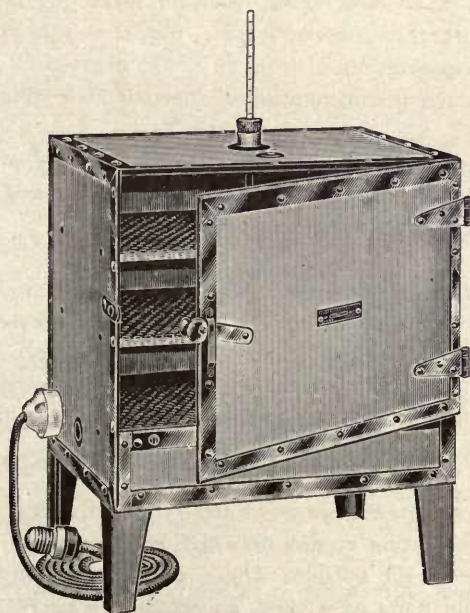
6416

6416 SECTION RAZOR—Of best quality steel, with folding handle, one side flat, other concave, 8 ctm. cutting surface, each in case..... 2.00



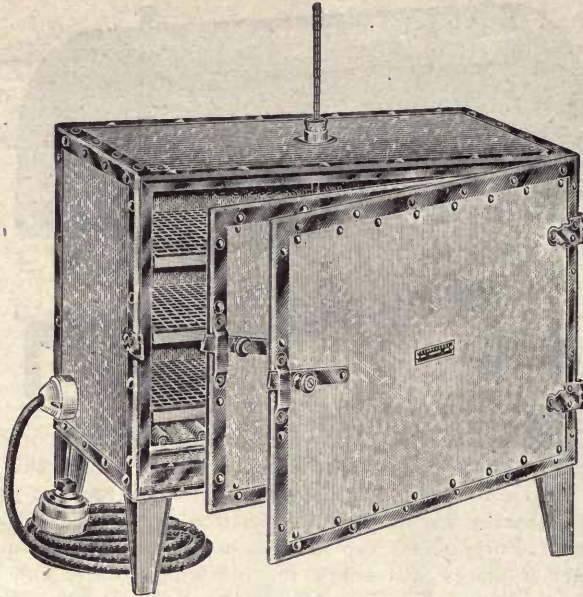
6418

- 6418 SLIDE WARMER, Electric**, to provide a convenient method of mounting paraffin sections. The slides are heated slowly and evenly over their entire extent to a temperature just below the melting point of the paraffin, thereby giving maximum flattening without damage to the specimen. Forty slides can be accommodated at one time. A thermometer is placed just below the block of transite and registers a temperature somewhat lower than that on the surface. With paraffin of 55° the best results are obtained when the regulator is set to maintain a thermometer temperature of 43°. The slides are protected from dust while drying by a metal hood which is placed over the apparatus. With this slide warmer drying is cut down from 24 hours at room temperature to 2 or 3 hours at a temperature just under the paraffin melting point. Price, complete.....**\$35.00**



6420

- 6420 ELECTRIC STERILIZER or Drying Oven.** The construction of this Sterilizer is the same as our 6422, except for single walls and a maximum current consumption of only six amperes. Inside dimensions: Height, 10 inches; width, 14 inches; depth, 10 inches. Single door and two removable shelves. Designed to maintain temperatures of from 60 to 150 degrees Centigrade. Furnished with six-foot cord and attachment plug. Chemical thermometer included. Weight, packed for shipment, 38 pounds. Price, complete.....**\$55.00**



6422

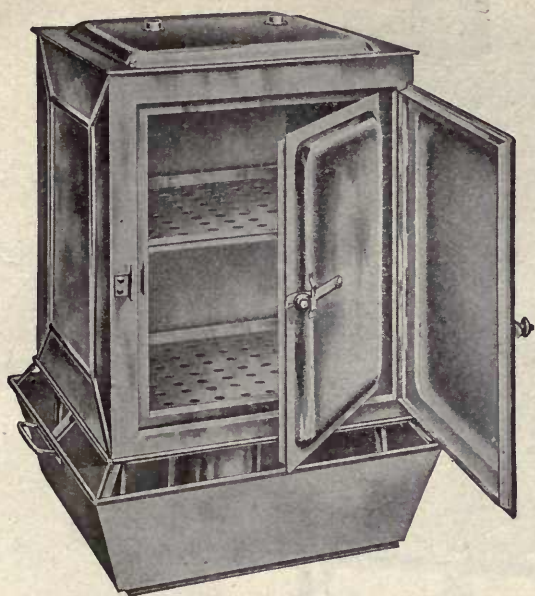
6422 ELECTRIC STERILIZERS or Drying Ovens. The frame work of our Sterilizers are made of steel, with bodies of transite and fittings of lacquered brass. Electric Sterilizer is made with double walls of transite, with an intervening dead air space and is furnished with double doors, thus insuring perfect insulation. It is constructed to maintain temperatures of from 60 to 200 degrees Centigrade, with a maximum current consumption of approximately nine amperes.

The inside dimensions are: Height, 10 inches; width, 18 inches; depth, 10 inches. It has two removable shelves and will, therefore, accommodate glass apparatus of various sizes.

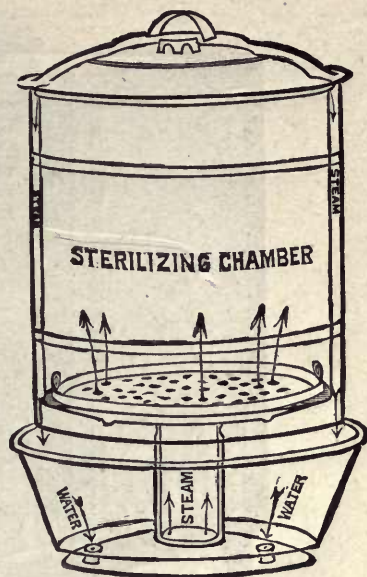
The Heating Medium consists of six self-contained wire units, which are wound on natural lava stones, thus preventing crumbling and disintegration, with greatly increased stability of the unit. The units can be easily removed with the aid of a screwdriver and replaced with new ones, should they burn out. A pilot lamp is provided to indicate when the current is on or off.

The heating units are governed by a controller and thermo-regulator, the operating screws of which are located on the side of the Sterilizer near the bottom. These afford means of utilizing two or more of the units at a time, as occasion may require. The electrical connections are complete, including special six-foot cord, with snap switch, ready for instant connection. Chemical thermometer included.

Owing to the amount of current (9 amperes) required to operate this Sterilizer at its maximum heat, special provision must be made for an electric circuit other than the ordinary light circuit. Weight, packed for shipment, 85 pounds. Price, complete as per cut.....\$110.00



6424



6424a

6424 STERILIZERS—Arnold's, Boston Board of Health Pattern. Made of copper throughout, with double walls, double doors and two removable shelves. The square form, with doors opening conveniently at the side, make these sterilizers much more desirable for laboratory purposes than other styles.

Size	1	2
Inside height of chamber, inches.....	14¾	15¼
Inside width of chamber, inches.....	8¾	12¼
Inside depth of chamber, inches.....	9	12¼
Each	\$40.00	45.00

The above Sterilizers can also be furnished so arranged that either steam or dry heat can be used in the sterilizing chamber at the pleasure of the operator, for an additional charge of \$5.00.

6424a STERILIZERS—Arnold's. Inexpensive and maintaining an unvarying temperature of 100° C. in all parts of the sterilizing chamber, without needing any care or attention. Made of heavy tin with copper bottom.

No.	622	623	624	625
Height inside, inches	7½	10½	11¾	12½
Diameter inside, inches	8½	9	10½	10¾
Each	\$4.50	5.25	6.00	6.75

STERILIZERS, as above, made entirely of polished copper.

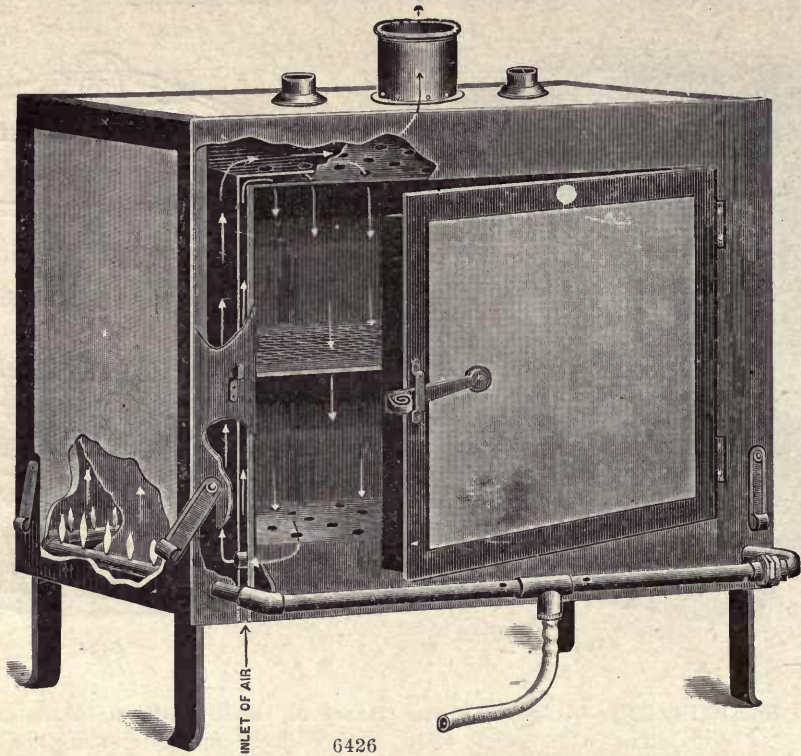
No.	632	633	634	635
Dimensions as above.				
Each	\$10.75	14.75	17.00	19.00

6424b STERILIZERS—Arnolds, similar to 6424a. Side Door pattern. Made of heavy tin with copper bottom.

No.	622½	623½	624½	625½
Height inside, inches	7½	10½	11¾	12½
Diameter inside, inches	8½	9	10½	10¾
Each	\$5.00	5.75	6.50	7.00

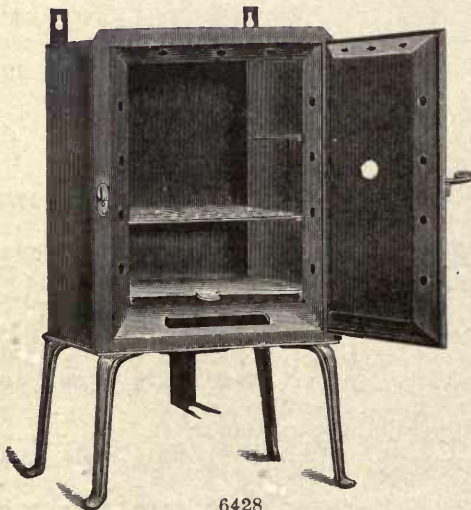
6424c STERILIZERS, as above, made entirely of polished copper.

No.	632½	633½	634½	635½
Dimensions as above.				
Each	\$12.00	16.00	18.50	20.00



6426

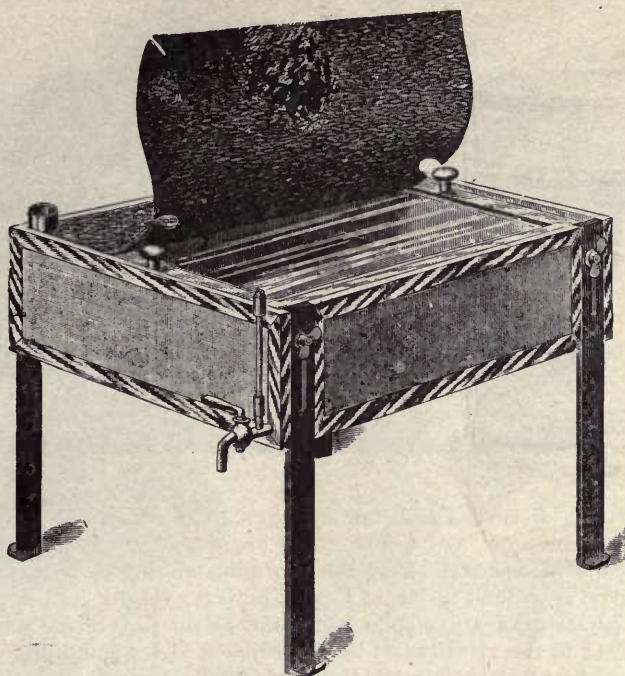
- 6426 STERILIZER, Hot Air, Lautenschlager.** These Hot Air Sterilizers are very efficient, being constructed with three walls, providing two air spaces through which currents of hot air, heated by a row of small Bunsen burners between the outer walls, pass continuously in the direction indicated by the arrows in the illustration. An even temperature is maintained, and there is no danger of withdrawing the temper from any instrument placed near the wall of the oven. The sterilizer is constructed of Russia iron covered with asbestos. A temperature of 150° C. can be attained within fifteen minutes. Twelve inches high, 18 inches wide, 9 inches deep, with one shelf...\$ 50.00
- 6426a STERILIZER, 18 inches high, 24 inches wide, 14 inches deep, with two shelves** 65.00
- 6426b STERILIZER, 24 inches high, 30 inches wide, 18 inches deep with three shelves** 90.00
- 6426c STERILIZER, 30 inches high, 36 inches wide, 20 inches deep, with three shelves** 125.00



6428

STERILIZERS, Hot Air, for sterilizing instruments, bandages, etc., in dry heat; made of Russia Iron, with double walls. In order to secure a perfectly even circulation of the heat, there are connecting openings between the door and oven. The heat is furnished by a powerful Bunsen Burner, which is placed below the funnel-shaped opening in the center of the bottom of oven, circulating through the double walls and escaping through the ventilator in the center of the top. Upright pattern, with ears to hang on wall and support for burner. The inside measurement is 12 inches high, 9 inches wide and 9 inches deep, with one shelf. Price\$20.00

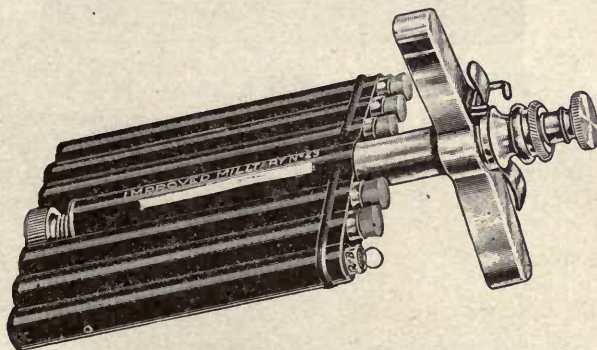
- 6428(a) STERILIZER, Hot Air,** same as above, but covered with asbestos. Price.....\$30.00



6430

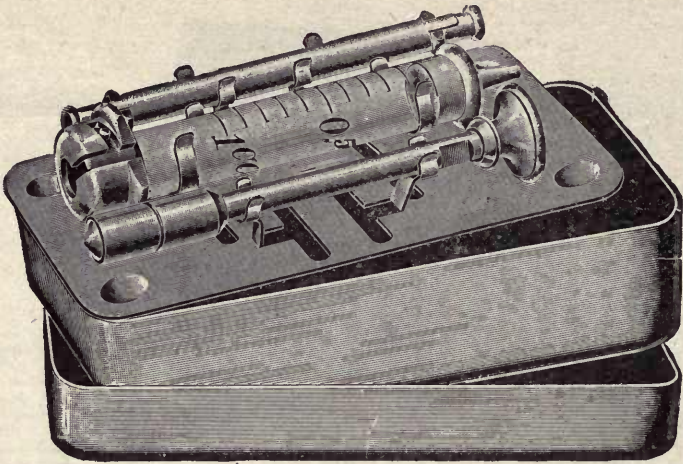
- 6430 SERUM OVEN, Apparatus for Coagulating Blood Serum, Koch, made of copper, double wall, heavily tinned on the inside, while the outside is covered with an insulating material, and the glass top with a heavy felt; supported by four legs, the two in front being slotted, and moving in grooves, allows the oven to be tilted as desired. It is provided with a water level and drip cock, and in addition there are two openings for inserting a thermometer and a gas regulator. Size, 12x10x2½ inches deep, inside dimensions.....\$35.00**
- 6430a SERUM OVEN, size 16x8x2½ inches deep, inside dimensions..... 42.50**
- 6430b SERUM OVEN, size 16x14x2½ inches deep, inside dimensions..... 50.00**

SYRINGE—IMPROVED MILITARY OUTFIT



6431

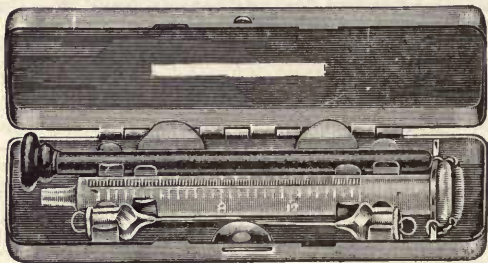
- 6431 The Ideal Emergency Hypodermic Equipment. Outfit is less than half an inch in thickness and curved to conform to the body. Adapted to any pocket, preferably the fob pocket. Unequaled for convenience. Simply release the spring which holds the cover in place and immediately syringe, tablets and needles are at your service. The telescoping cover accommodates standard Hypodermic Vials and entirely eliminates dust from the tubular vial holders by completely closing over them. Price, nickel-plated case.....\$ 4.00**



6432

6432 SYRINGE, Record Precision Syringes. The "Record" Syringe consists of metal and glass only. The metal mountings are soldered to the barrel by means of a metal alloy, thus forming an inseparable whole. The glass barrel is ground inside to form a perfect cylinder, and is provided with an accurate graduation etched into the glass. The nickel plunger is "ground in" to fit the glass barrel hermetically; it slides smoothly, yet tightly, without any lubricant. Complete with two steel needles and sterilizing rack in seamless metal case.

Capacity, cc.....	1	2	5	10	20
Each, net.	\$3.25	4.00	5.50	6.50	8.00
6432a SYRINGE Only, net.....	2.50	3.00	4.25	5.00	5.75



6434

6434 SYRINGE, Luer's, glass aseptic syringes. Constructed without any washers or packing and is easily sterilized in solution or boiling water. Each plunger is ground to fit its own barrel and is not interchangeable, insuring a perfect fit and obviating back-flow or regurgitation. Complete with two steel needles in seamless metal case.

Capacity, cc.....	2	5	10	20
Each, net.....	\$2.50	3.50	4.50	6.25
6434a SYRINGE, Syringe only, net.....	1.25	2.25	3.00	4.00



6436

6436 SYRINGE, Luer's Tuberculin Syringes, for the administration of Tuberculin, Concentrated Serums, etc. Complete with two steel needles in metal case.

Capacity, cc.....	1/2	1
Graduated to cc.....	1/40	1/100
Each, net.....	\$3.25	2.75

LABORATORY TABLE



6347

The Laboratory necessitates the use of an assortment of various apparatus, chemicals, glassware, etc., that always take up valuable space and usually consume time in assembling, whenever a test is to be made.

To facilitate the work in the Laboratory, we have designed a compact Laboratory Table, with a place for everything, thus eliminating time usually spent in looking for things, or in connecting or disconnecting electrical apparatus, that are being used.

General Description.

The Cabinet is made from selected quarter-sawed oak, with a massive and substantial construction. It is finished in light oak with the finest high grade hand-rubbed finish. The top of the working table is finished in the customary acid-proof black. The dimensions over all are: height 56", width 56", depth 33". Size of working space, 55 $\frac{3}{4}$ " x 18". Height from floor 30". The upper part of the cabinet is divided into two equal compartments, each 20 $\frac{3}{4}$ " high x 25 $\frac{1}{2}$ " wide x 11 $\frac{1}{4}$ " deep and provided with two adjustable shelves. Specially constructed roller curtains, easily closed or opened, insure dust-proof compartments. A hole 3" in diameter is provided in the right hand corner of the second compartment, permitting the convenient disposal of refuse into a jar, placed on a small shelf in the compartment below. The lower part of the cabinet has two compartments, each 25" high x 15" wide x 30" deep, equipped with doors. The right hand compartment is provided with an exceptionally solid, stationary shelf intended to support a Centrifuge. The space below this shelf as well as the left hand side compartment are intended for storage purposes of glassware, etc. There are two drawers, each 2 $\frac{1}{2}$ " high x 8 $\frac{1}{2}$ " wide x 21 $\frac{3}{4}$ " deep. One of them is divided into several small compartments while the other one is without divisions. All compartments and drawers are furnished with locks and keys, thus preventing tampering.

ATTACHMENTS AND ACCESSORIES

A porcelain sink, 7 inches in diameter by 6 $\frac{1}{2}$ inches deep, is furnished together with a gooseneck faucet. Water and gas connections are provided and arranged so that every convenience is offered the operator.

Size of water connection.....	$\frac{3}{8}$ inch
Size of gas connection.....	$\frac{3}{8}$ inch
Size of drain.....	1 inch

A Burette Holder is also furnished. This holder is attached to the side of the dividing partition in the upper part of the Cabinet. It may be removed, when not in use, so as not to interfere with the closing of the roller curtain. The Burette is held in position by an easily adjusted spring, permitting adjustment both horizontally and vertically.

Electrical Connections. The table is wired for electricity. A push switch, located on the right hand side, cuts off the electric current to the entire table. Four Edison Base Sockets installed conveniently at the right hand corner of the working space, afford connections for the electrical apparatus required. A special socket in the lower right hand compartment provides connection for a centrifuge.

An adjustable Desk Light is installed at the top of the Cabinet, directly over the dividing partition. This light is provided with a separate switch.

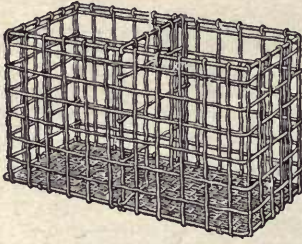
In the center of the table, in a position most appropriate for the use of a microscope, there is embedded an electric microscope lamp, covered with approved daylight glass. A convenient push switch is provided for this lamp. When not in use, the daylight glass is protected by a hinged metal cover, which folds down flush with the top of the table.

An electric cord with attachment plug is also furnished and the table may be attached to any electric light socket without danger of burning out the fuse.

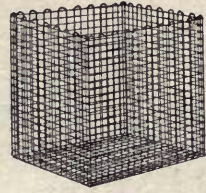
MANUAL

In order to enable the physician to more accurately perform the laboratory tests, essential to clinical diagnosis, we furnish a complete working manual with each table.

Price of the Physicians' Laboratory Table, complete with the above mentioned attachments and accessories, but without apparatus, stains or glassware, F. O. B. Chicago\$500.00



6438



6438a

- 6438 TEST TUBE BASKET**, of Wire, for sterilizing test tubes, etc., rectangular shape, with partition in the middle. 8 in. long, 5 in. high, 4 in. wide...**\$1.00**
- 6438a TEST TUBE BASKET**, as above, square shape, 5 in. long, 5 in. high, 4 in. wide **.80**
- 6438b TEST TUBE BASKET**, size 6 inches by 6 inches by 6 inches..... **1.00**
- 6438c TEST TUBE BASKET**, size 9 inches by 9 inches by 9 inches..... **2.00**
- 6438d TEST TUBE BASKET**, size 5 inches by 4 inches by 5½ inches high..... **1.00**
- 6438e TEST TUBE BASKET**, size 8½ inches by 5 inches by 5½ inches high..... **1.50**

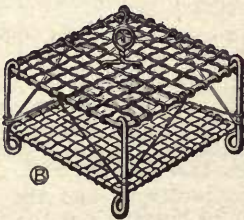


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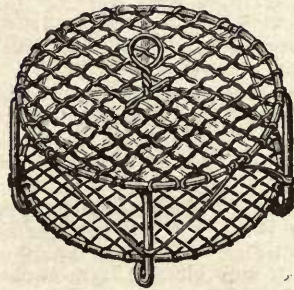


6442

- 6440a TEST TUBE BASKET**, as above, round form, 9 in. diameter, 9 in. high.... **2.00**
- 6442 TEST TUBE BASKET**, Brown's, of perforated brass, 8x4x3 inches, with partition **3.75**



6444

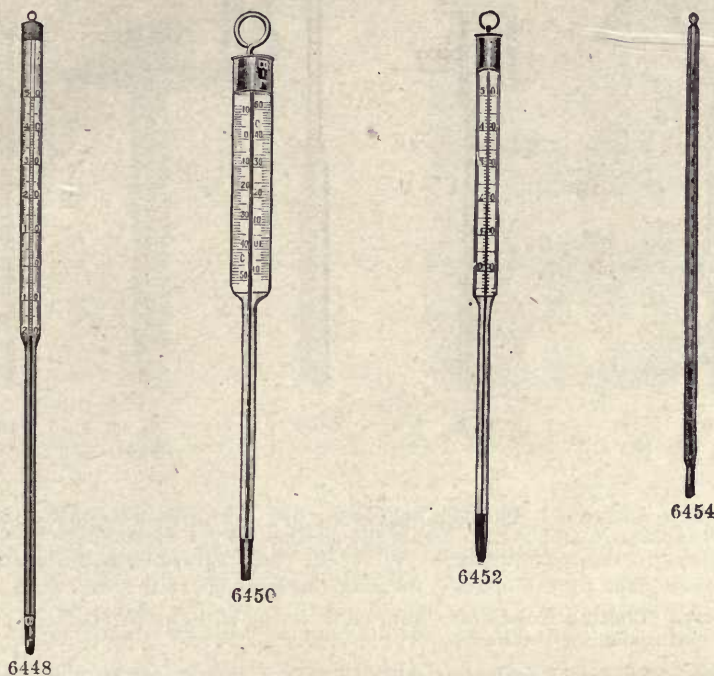


6446

- 6444 TEST TUBE SUPPORT**, made of tinned wire, square form for 48 tubes.... **1.50**
- 6446 TEST TUBE SUPPORT**, as above, round form for 48 tubes..... **1.50**

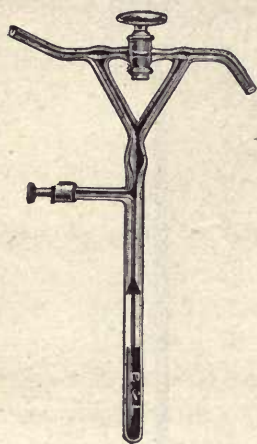
THERMOMETERS

In bacteriological work it is essential that the thermometer be reliable and accurate. Those which we list below have been found entirely satisfactory in the different kinds of work for which they are intended.



- 6448 Incubator Thermometer.** This high grade thermometer is made of the best quality normal glass and is provided with a milk glass scale on which the standard temperature, $37\frac{1}{2}^{\circ}$, is indicated by a red line. Length, 500 mm.: scale 0 to 60°C , graduated in $1/10^{\circ}$\$7.50
- 6448a Incubator Thermometer,** as above. Length, 450 mm.; scale 0 to 50°C , graduated in $1/5^{\circ}$ 6.00
- 6450 Incubator Thermometer,** self-registering; maximum and minimum on Sixe's system. The milk glass scales are 160 mm. in length and are graduated from minus 20° to plus 50°C . The standard temperature is indicated by a red line. The lower part for insertion in the tubulation of the incubator is 200 mm. long. The thermometer is furnished complete with horse-shoe magnet for readjusting the indicators..... 7.50
- 6452 Incubator Thermometer** with very distinct graduations on a white background. Graduated from 0 to 50°C with standard temperature indicated by a red line. Total length 250 mm..... 3.00
- 6454 Chemical Thermometer** with Centigrade scale etched in degrees on stem with white background. Length 300 mm. Scale graduated to 100°C .. 1.10
- 6454a Chemical Thermometer,** as above. Length 300 mm. Scale graduated to 150°C 1.25
- 6454b Chemical Thermometer,** as above. Length 350 mm. Scale graduated to 200°C 1.35
- 6454c Chemical Thermometer,** as above. Length 400 mm. Scale graduated to 360°C 1.50

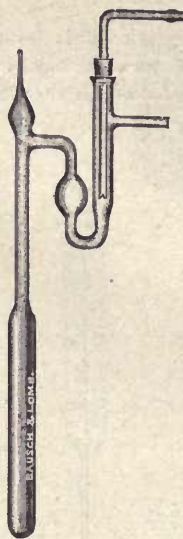
THERMO REGULATORS



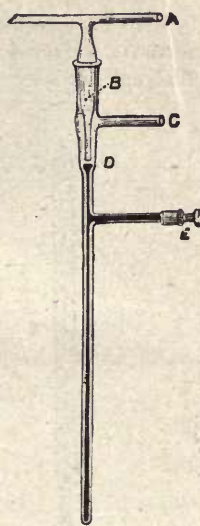
6450



6458

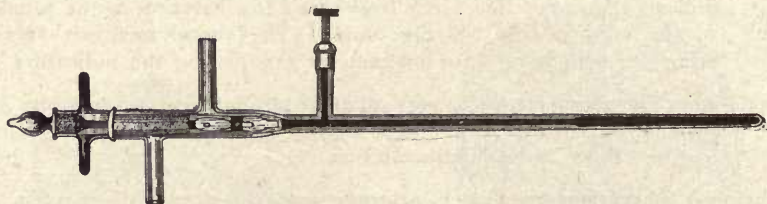


6460



6462

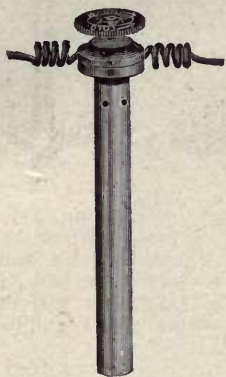
- 6456** Muencke's Improved Thermo-Regulator for low pressure only. In this regulator a stopcock controls the passage of gas through the horizontal tube to the reserve flame. When the temperature rises the gas supply is reduced by the mercury closing the passage at the fork..... \$7.50
- 6458** Reichert's Thermo-Regulator, improved form with stopcocks to prevent extinguishing the flame..... 5.00
- 6460** Dunham's Thermo-Regulator. This is an extremely sensitive regulator in which the sensitiveness is derived from a large alcohol bulb. The minute changes in the volume of the alcohol as caused by the variations in temperature act upon a U-shaped column of mercury and control the volume of gas which passes through the tubes. Adjustments for the different temperatures to be maintained are made by sliding the gas inlet tube upward or downward as required. The thermostat is furnished complete with liquid and mercury for filling. A set of directions for use is supplied with each instrument..... 5.00
- 6460a** Glass Parts only for Dunham's Thermo-Regulator..... 3.00
- 6462** Reichert's Thermo-Regulator for high temperatures..... 4.25
- 6462a** Reichert's Thermo-Regulator for low temperatures..... 4.25
- 6462b** Reichert's Thermo-Regulator, short form for water baths..... 4.25



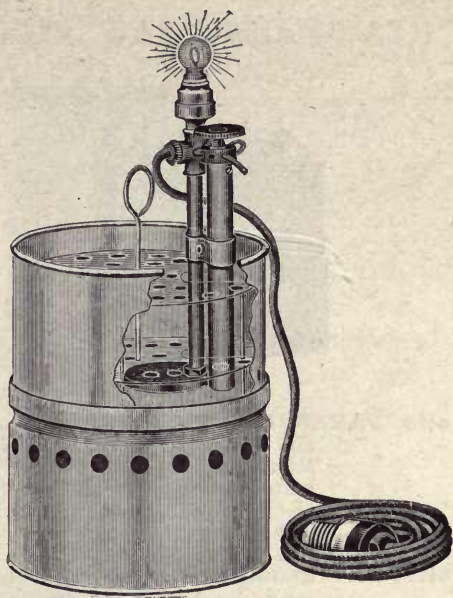
6464

- 6464** Reichert-Novy's Thermo-Regulator. This is an improved form for high or low temperatures and the regulator may be adjusted so that the maximum flow of gas, which is ample for high temperatures, may be reduced to an amount just sufficient to keep the flame from going out. When used in connection with the gas pressure regulator, Merrill's, it will be found to work to the greatest satisfaction.....\$10.00

See, also, Gass Pressure Regulators.



6466



6468

- 6466 THERMOSTAT, Pencil Type.** The Thermostat shown herewith is used for controlling temperatures of liquids. It consists of a thin copper tube hermetically closed at the bottom end, so that it may be partly immersed in liquids without damage to the interior. A sensitive bimetallic bar extends from the bottom half way up the tube

The range of the Thermostat is from 30 to 80 degrees Centigrade. A special condenser is mounted inside the tube. The condenser kills the electric spark when the contact points are separated, thus protecting same against destruction, provided the electric current does not exceed 1 ampere.

The dimensions of the Thermostat are: 6 inches in length x $\frac{5}{8}$ -inch in diameter.

Price, complete.....\$12.00

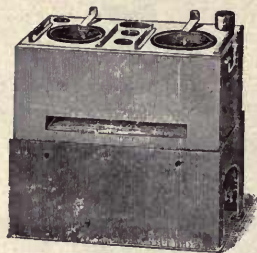
- 6468 Combination Electric Heater and Pencil Type Thermostat for Heating and Controlling Temperature of Liquids in Water Baths.**

The apparatus consists of a heating disc, measuring five inches in diameter by one-half inch in thickness and an adjustable pencil type electro-thermostat, measuring six inches in length by five-eighths of an inch in diameter, together with a pilot lamp indicating when the current is on or off.

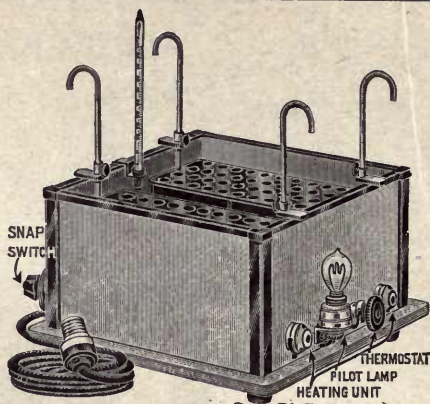
They are mounted together and are self-contained, with a six-foot cord and attachment plug, which may be connected to any 110-volt electric light socket.

Constant water level in the bath is desirable for best results; water bath heater provides for the maintenance of any temperature between 35 degrees and 60 degrees Centigrade in any suitable utensil. It is not necessary to use a water bath as shown in the illustration. The apparatus can be applied to any water bath where the maximum capacity of water does not exceed two quarts.

Price, complete without water bath.....\$25.00



6470

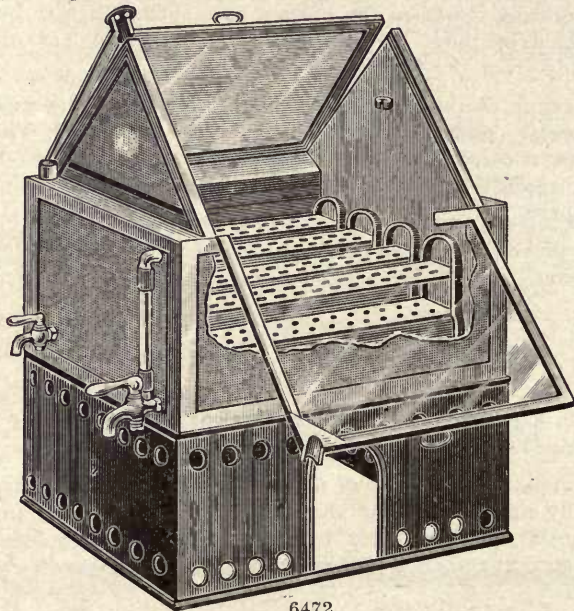


6471a

6470 PARAFFINE BATH, made of polished copper, 7 inches long, $3\frac{3}{4}$ inches wide and $3\frac{1}{2}$ inches deep, with extra sheet iron bottom and iron base, which is 5 inches high. It is provided with a space for heating slides, and two nickel-plated cups. The shallow cup is $2\frac{1}{8}$ inches diameter and $\frac{3}{4}$ inch deep, watch glass shape, and the deep one is $2\frac{1}{8}$ inches diameter and $1\frac{1}{2}$ inches deep. Also tubulations for thermometer, gas regulator and three test tubes.

6471a BATH. Inside dimensions of water compartment, 9x9x5 inches deep. Furnished with two No. 55 test tube racks, thermometer and 96 $3\times\frac{3}{8}$ inch test tubes. Adjusted for either $37\frac{1}{2}^{\circ}$ or 56° Centigrade. Maximum current consumption 2 amperes. Price, complete.....\$50.00

6471b BATH. Inside dimensions of water compartment $9\times4\frac{1}{2}\times5$ inches deep. Furnished with one No. 55 test tube rack, thermometer and 48 $3\times\frac{3}{8}$ inch test tubes. Adjusted for either $37\frac{1}{2}^{\circ}$ or 56° Centigrade. Maximum current consumption $1\frac{1}{4}$ amperes. Price, complete.....\$37.50



6472

6472 WATER BATH, Wassermann's, with four copper racks, each to hold 24 blood tubes, with glass doors at the top at an angle, which prevent the condensed moisture from dripping into the tubes. This arrangement also allows the blood tubes to be very easily observed without opening the door and thereby changing the temperature. This bath is constructed of heavy copper, tinned inside, with double wall, the outer surface covered with insulating material, provided with stopcocks for water outlets from the bath and jacket, also tubulations for Regulator and Thermometers, one of which can be conveniently fitted inside the bath so that it can be read without opening the door.

Outside dimensions are 18 inches high, 18 inches long and 16 inches wide; the base is 9 inches high.

Price\$90.00

ARMY MEDICAL SCHOOL MODEL WASSERMAN BATH



6374

DESCRIPTION

This Pattern Wasserman Bath which has been adopted as the Standard for the United States Army, is most economical in operation.

The Water Vessel which measures 30"x23"x12" deep, on the standard size, permits the use of a very large volume of water. Being surrounded by a Case of Polished Rust Resisting Iron, lined with a heavy layer of asbestos, the water holds its temperature with the minimum expenditure of heat. A single Micro burner being sufficient for this large bath when gas is used.

The only part exposed to the air is the lid.

The Lid is made double the outer, or top being flat, the inner lid sloping to rear. The condensation which forms on the outer lid falls on the inner lid, flowing to the two rear corners prevents any dripping of water into the Tubes from injuring the specimens being tested.

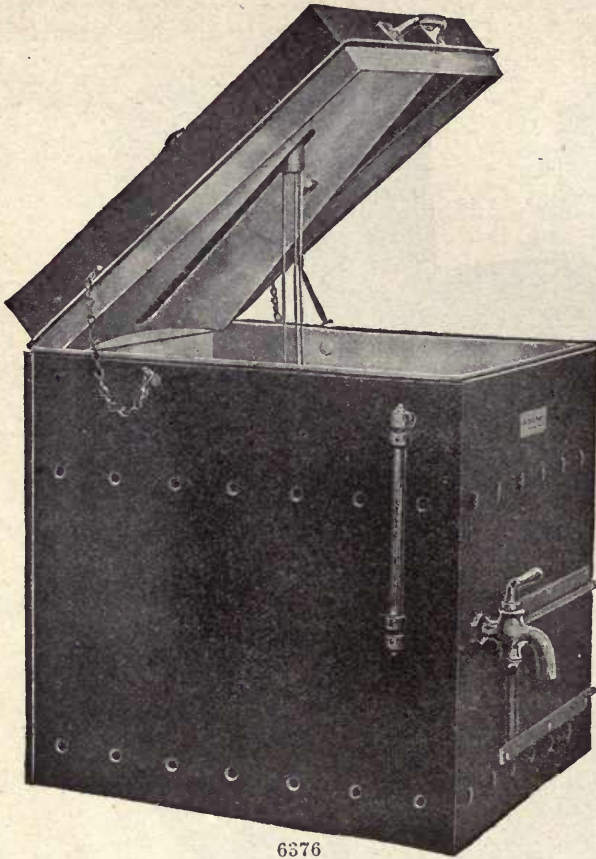
There is furnished with each bath a Thermometer, also a Gas Thermo Regulator and two Micro Burners.

The Constant Level which maintains the correct height of water in the bath is very simple, and easily connected with two rubber hose, one from the water supply and the other to the waste pipe. The use of this feature is optional. The amount of water evaporated being very little.

When Electric Equipment is ordered with this, we furnish an Electro Regulator of the best make and all necessary connections, Lamp Switch, etc., to use on either 110 or 220 volts.

The racks furnished, 20 in number, are marked from 1 to 200, are the Standard Army Medical School Wasserman Type.

WASSERMAN BATH



This Bath designed for Doctor S. R. Miller of the Phipps Psychiatric Clinic of Johns Hopkins Hospital of Baltimore, Md.

Being mounted in an Asbestos lined Russian Iron Stand, maintains the required temperature $37\frac{1}{2}^{\circ}$ with the smallest possible consumption of gas.

The Water Pan and the Lid made of Heavy Copper, heavily coated on the inside with pure block tin and polished outside, having a specially constructed Double Lid the inner one of which slopes toward the rear, preventing any dropping of the Condensation of the Sera being tested.

The Thermometer Holder is so arranged that the Thermometer maintains its upright position at all times, thus when necessary to place near a wall, the Thermometer does not have to be removed when raising the lid.

There are two other tabature openings provided for such times as they may be desirable.

Prices and Sizes

Small Wasserman Bath
\$45.00

Outside dimensions, 24"x14"x18" high. Hold 6 Racks
16 Tubes each.

Large Wasserman Bath, \$50.00. Outside dimensions, 24"x18"x18" high. Holds 10 Racks 16 Tubes each.

When desired we can make a special provision on the side for Thermometer, Thermo Regulator, Constant Level Device and Glass Water Gauge. Extra, \$10.00.

Racks for Above

White Enamel Metal Rack for 12 Tubes, each.....\$1.50
White Enamel Metal Rack for 16 Tubes, each.....2.00



6378 Inactivation Bath.

Measurements, 11" diameter and 12" high. Designed to prevent the loss of heat and to maintain the proper temperature 56° with minimum cost. Water compartment of heavy copper, tinned inside with pure block tin. Test tube holders may be used in such a way that all small or all large tubes may be used or the outer or inner row may be small or large as suits the conditions that may arise.

Price, complete\$35.00
Extra Outer Holders.....\$6.50 Extra Inner Holders.....\$7.50

Special and ordinary glassware made in our glass blowing department. Culture flasks, fermentation tubes and so forth made exactly to specifications with prices reasonable. Quotations on special bacteriological apparatus, both metallic and of glass gladly given upon request

CHEMICAL SECTION

In the following pages of our **CHEMICAL SECTION**, we are listing the prices on all Chemicals commonly handled by us. While it is impossible to guarantee against the fluctuations in prices during these times, the prices shown are those prevailing at the time of going to press. Additional charge is made for containers, depending upon the size and character of same.

A. DAIGGER & CO.

	Oz.	Lb.		Oz.	Lb.
Abrastol	\$ 2.00	.....	Acid Boric cryst. c.p.....	.10	.50
Absinthin .....	.....	.....	Acid Boric powd. c.p.....	.15	.60
Acetal pure.....	1.50	.....	Acid Boric cryst. or powd.		
Acetaldehyde—See Aldehyde			U. S. P.....	.10	.35
Ethylc .....	.....	.....	(Acid) Boric Anhydride		
Acetamide	1.25	.....	(fused) whole c.p.....	.....	.....
Acetanilide, cryst. or powd.			(Acid) Boric Anhydride		
U. S. P.....	.15	\$ 1.20	(fused) powd. pure.....	.20	1.90
Acetin (mono).....	.....	.....	Acid Borobenzoic.....	.45	.....
Acetone techn.....	.....	.60	Acid Borotungstic.....	2.50	.....
Acetone pure U. S. P.....	.....	.80	Acid Bromacetic (Mono)...	.....	.....
Acetone c. p.....	.....	1.45	Acid Bromic 1.12.....	.40	5.00
Acetone, Monochlorated see			Acid Butyric 60% pure.....	.30	2.70
Chloracetone .....	.....	.....	Acid Butyric 80%.....	.40	3.25
Acetone Sulfite.....	.30	2.50	Acid Butyric iso c.p.....	.....	.....
Acetonitrile .....	.....	.....	Acid Camphoric medic U.S.P.	.60	6.00
Acetophenone, (Hypnone)...	.....	.....	Acid Camphoric DAB.....	.....	.....
Acetphenetidin U. S. P.....	4.00	.....	Acid Capric (Acid Caprinic)		
Acetphenylenediamine Para.	.....	.....	synthetic .....	.....	.....
Acetotoluid, ortho.....	.....	.....	Acid Caprylic.....	.....	.....
Acetoxim .....	.....	.....	Acid Carbolc crude Com'l..	.....	.30
Acetyl Acetone.....	.....	.....	Acid Carbolc white cryst		
Acetyl Bromide.....	1.30	.....	U. S. P.....	.20	1.40
Acetyl Chloride.....	.60	.....	Acid Carbolc white loose		
Acetyl diphenylamine.....	.....	.....	cryst. C. P.....	.20	1.60
Acetyl iodide.....	.....	.....	Acid Carbolc synthetic.....	.....	.....
Acetyl methylhexylketone...	.....	.....	Acid Carbonic (liquefied)...	.....	.25
Acetyl methylpropylketone...	.....	.....	
Acetyl Oxide—see (Acid)			Cylinders not returnable for		
Acetic Anhydride.....	.....	.....	credit but refilling only		
Acetyl phenylhydrazine			Acid Carminic.....	.....	.....
(Hydracetin)	2.50	.....	Acid Chloric 1.12 (30%).....	.65	.....
Acid Acetic 36% U. S. P....	.....	.35	Acid Chlorplatinic—see Plat-		
Acid Acetic 50% c.p.....	.....	.60	tin. Chloride.....	.....	.....
Acid Acetic 80% c.p.....	.....	.80	Acid Cholic (Acid Glycocho-		
Acid Acetic 99.5% glacial c.p.	.....	.85	lic) 30%.....	.65	.....
(Acid) Acetic, anhydride c.p.	.45	4.75	Acid Chromic technic.....	.20	2.00
Acid Acetylsalicylic (Aspi-			Acid Chromic pure.....	.25	2.35
rin)	1.40	.....	Acid Chromic c.p.....	.30	3.00
Acid Aconitic.....	.....	.....	Acid Chrysophanic medic.		
Acid Amidobenzoic (Ortho)			U. S. P.....	.70	7.50
techn .....	.....	.....	Acid Cinnamic (Cinnamylc)	.85	.....
Acid Amino-acetic—See Gly-			Acid Citric cryst. U.S.P....	.20	1.25
cocoll .....	.....	.....	Acid Citric powd. U.S.P....	.20	1.25
Acid Aminosuccinic—see			Acid Citric cryst. c.p.....	.25	1.85
Acid Asparaginic.....	.....	.....	Acid Citric powd. c.p.....	.25	1.95
Acid Anilinesulfonic—see			Acid Cresylic—see Cresol...	.....	.....
Acid Sulfanilic.....	.....	.....	Acid Dichloroacetic.....	2.50	.....
Acid Anisic.....	.....	.....	Acid Formic 1.06 abt. 25%		
Acid Arsenic pure.....	.20	1.30	pure .....	.15	.60
Acid Arsenic c.p.....	.15	.80	Acid Formic 1.20 abt. 75%		
Acid Arsenous lump or powd.			pure .....	.20	1.50
techn .....	.10	.35	Acid Formic 1.20 abt. 90%		
Acid Arsenous powd. c.p....	.15	.70	pure .....	.25	2.00
Acid Asparaginic.....	.....	.....	Acid Mumaric.....	.....	.....
Acid Benzaminoacetic—see			Acid Gallic cryst. U.S.P....	.25	2.25
Acid Hippuric.....	.....	.....	Acid Glycocholic.....	.....	.....
Acid Benzoic from Resin			Acid Hippuric cryst. c.p.....	.....	.....
sublimed	1.10	.....	Acid Hydrobromic diluted		
Acid Benzoic from Toluene.	.....	.....	10% .....	.15	1.05
(Acid) Benzoic Anhydride..	.....	.....	Acid Hydrobromic conc. 34%	.25	2.40

	Oz.	Lb.		Oz.	Lb.
Acid Hydrobromic fuming 1.31 pure.....	\$ 0.30	\$ 2.60	Acid Muriatic see Acid Hydrochloric		
Acid Hydrochloric 20° com'l 6-lb. bottle.....		.07	Acid Nitric 40° Be techn. 7-lb. bottle.....		\$ 0.17
Acid Hydrochloric 20° 120-lb. carboy .....		.05	Acid Nitric 40° Be techn. 140-lb. carboy.....		.15
Acid Hydrochloric 1.20 c.p. ....	.10	.20	Acid Nitric 1.42 c.p.....	\$ 0.10	.25
Acid Hydrochloric 1.20 c.p. 6-lb. bottles.....		.13	Acid Nitric 1.42 c.p. techn. 7-lb. bottle.....		.20
Acid Hydrochloric 1.20 c.p. 10x6-lb. bottles.....		.12	Acid Nitric 1.42 c.p. techn. 10x7-lb. bottle.....		.18
Acid Hydrochloric 1.20 c.p. 120-lb. carboy.....		.11	Acid Nitric 1.42 c.p. techn. 140-lb. carboy.....		.17½
Acid Hydrochloric 1.20 c.p. spec. As free.....	.10	.45	Acid Nitric diluted 10% U. S. P.....		.17
Acid Hydrochloric diluted 10% U.S.P.....		.15	Acid Nitric fuming 1.60 pure ....		.65
Acid Hydrocyanic diluted 2% U.S.P.....	.15	.60	Acid Nitric fuming 1.60 c.p. ....	.20	.80
Acid Hydrofluoric 48% techn in rubber bot.....		2.25	Acid Nitrobenzoic Meta c.p.		
Acid Hydrofluoric 48% techn in ceresin bot.....		.90	Acid Nitrobenzoic Ortho c.p.		
Acid Hydrofluoric 48% techn 10-lb. lead jug.....		.35	Acid Nitrobenzoic Para c.p.		
Acid Hydrofluoric 48% techn 80-lb. lead jug.....		.30	Acid Nitrohydrochloric U.S. P. ....		.40
Lead and ceresin not returnable			Acid Nitrohydrochloric di- luted 70%.....		.30
Acid Hydrofluoric 48% c. p. ....	.25	1.25	Acid Nitrosonitric see Acid Nitric fuming.....		
Acid Hydrofluorsilicic 1.16 techn.....	.15	.90	Acid Nitroanthic see Acid picric		
Acid Hydrofluorsilicic c.p.		2.25	Acid Octoic } see Acid Acid Octylic } Caprylic		
Acid Hydriodic 1.5, pure....	.60		Acid Oleic techn.....		.30
Acid Hydriodic 1.7, pure....	.80		Acid Oleic pure.....	.10	.35
Acid Hydrio diluted 10%....	.20	1.80	Acid Orthobic see Acid Boric		
Acid Hypophosphorous 10% U.S.P.....	.15	.75	Acid Orthocresylic see Cre- sol Ortho.....		
Acid Hypophosphorous 30% U.S.P.....	.20	1.50	Acid Orthooxybenzoic see Acid Salicylic.....		
Acid Hypophosphorous 50% U.S.P.....	.25	2.25	(Acid) Osmic Anhydride..		
Acid Iodic cryst. C.P.....	1.50		Acid Oxalic cryst. techn.....	.15	1.15
Acid Iodic Anhydride.....	2.25		Acid Oxalic cryst. c.p.....	.20	1.55
Acid Lactic 1.21 C.P.....	.45	4.50	Acid Oxalic Anhyd. c.p.....	.25	2.00
Acid Malic cryst. pure.....			Acid Oxyphenic see Pyro- catechin		
Acid Meconic cryst.....			Acid Oxysuccinic see Acid Malic		
Acid Metacetic see Acid Propionic.....			Acid Palmitic techn.....	.20	.90
Acid Metacresylic see Cresol Meta.....			Acid Palmitic cryst. pr.....		
Acid Methanedicarboxylic see Acid Malonic.....			Acid Para-amidobenzolsul- fonic see Acid sulfanilic....		
Acid Methoxylbenzoic see Acid Anisic.....			Acid Para-anilinesulfonic see Acid sulfanilic.....		
Acid Methylacetic see Acid Propionic			Acid Pararosolic see Acid Para		
Acid Molybdic pure 85%....	.55	6.00	Acid Paratartaric see Acid Racemic		
(Acid) Molybdic Anhydride c.p. 100%.....	1.00	12.50	Acid Perchloric 1.12 c.p.....	.50	
Acid Monochloracetic cryst. ....	.30	2.75	Acid Perosmic see Acid Os- mic		
Acid Mucic pure.....					

	Oz.	Lb.		Oz.	Lb.
Acid Phenylformic see Acid Benzoic .....	....	....	Acid Sulfuric 66° Be com'l 180-lb. carboy.....	....	\$ 0.06
Acid Phenylic see Acid Carbo-lic .....	....	....	Acid Sulfuric 1.84 c.p.....	....	.13
Acid Phosphomolybdic cryst. c.p. ....	....	....	Acid Sulfuric 1.84 c.p. 10x9-lb. bottles .....	....	.12
Acid Phosphomolybdic 10% sol.	\$ 0.20	\$ 1.80	Acid Sulfuric 1.84 c.p. 180-lb. carboy .....	....	.11
Acid Phosphoric Ortho 10% U.S.P. ....	.10	.30	Acid Sulfuric 1.84 spec. c.p. 9-lb. bottle N. free.....	....	.20
Acid Phosphoric Ortho 50% c.p. ....	.15	.55	Acid Sulfuric diluted 10% U. S. P.....	....	.15
Acid Phosphoric Ortho 85% .....	.15	.80	Acid Sulfuric fuming 20% SO ₃ techn.....	....	.40
Acid Phosphoric Meta glac. sticks .....	.20	1.25	Acid Sulfuric fuming 15% SO ₃ c.p.....	....	.70
Acid Phosphoric Meta c.p... ..	.20	1.50	(Acid) Sulfuric Anhydride in sealed bulbs.....	....	....
(Acid) Phosphoric Anhydride .....	.25	1.90	Acid Sulfurous solut. 5-6% c.p. ....	....	.28
Acid Phosphorous 1.12 solut. ....	.45	4.25	Acid Tannic.....	\$ 0.20	1.85
Acid Phosphotungstic cryst.. ..	1.10	....	Acid Tartaric cryst. or powd. U. S. P.....	.15	1.10
Acid Phosphotungstic 10% solution .....	.40	3.50	Acid Tartaric cryst. c.p.....	.20	1.60
(Acid) Phtalic .....	....	....	Acid Tartaric powd. pure....	.20	1.50
Acid Picric techn.....	.45	4.25	Acid Thioacetic c.p.....	....	....
Acid Picric c.p.....	.50	4.00	Acid Thymic see Thymol....	....	....
20% water; cannot be shipped dry			Acid Trichloroacetic.....	.60	....
Acid Propionic.....	....	....	Acid Tungstic c.p.....	....	....
Acid Prussic 2% see Acid Hydrocyanic .....	....	....	Acid Uric (Uric Oxide).....	....	....
Acid Pyrocatechuic see Pyrocatechin .....	....	....	Acid Uvic see Acid Racemic. ....	....	....
Acid Pyrogallic resubl.....	.50	5.00	(Acid) Valerianic trihydrated .....	.80	....
Acid Pyroligneous crude .....	....	.20	Acid Wolframc see Acid Tungstic .....	....	....
Acid Pyroligneous purif....	....	.40	Aconitine Alkaloid cryst. Potent. U.S.P.....	....	....
Acid Pyrophosphoric.....	.25	2.00	Adonite cryst.....	....	....
Acid Quinic cryst.....	....	....	Aduroil .....	....	....
Acid Racemic inactive (Acid Uvic) .....	....	....	Aesculin .....	....	....
Acid Rosolic.....	.80	....	Agar Agar white shreds....	.15	1.00
Acid Rufgallic.....	....	....	Agar Agar white powd.....	.20	1.25
Acid Saccharolactic see Acid Mucic .....	....	....	Agaricin	3.00	....
Acid Salicylic amorph U.S.P. ....	.40	3.75	Airol (Bismuth Oxyiodogal-late)	1.35	....
Acid Salicylic Natural from oil wintergreen.....	.50	5.00	Alanin Alpha.....	....	....
Acid Silicic fine powd. techn. ....	....	.85	Alantin see Inulin "Kiliani". .....	....	....
Acid Silicic c.p.....	.20	1.85	Albumen from Blood.....	.20	.90
Acid Silicofluoric see Acid hydrofluorsilicic .....	....	....	Albumen from Eggs sol....	.20	1.55
Acid Stearic techn.....	....	.50	Albumen from Eggs powder .....	.25	1.55
Acid Stearic pure.....	.20	1.05	Alcohol Allylic.....	....	....
Acid Stibic see Antimonious Oxide .....	....	....	Alcohol Amylic (Fusel Oil). .....	.20	1.55
Acid Stibious see Antimonious Oxide.....	....	....	Alcohol Amylic c.p.....	.35	3.00
Acid Cuccinic c.p.....	.90	....	Alcohol Amylic (iso).....	....	....
Acid Sulfanilic.....	.60	3.50	Alcohol Amylic Tertiary (Amylene Hydrate).....	....	....
Acid Sulfocarboic.....	....	.40	Alcohol Benzylic.....	....	....
Acid Sulfosalicylic.....	1.05	....	Alcohol Butylic, normal....	....	....
Acid Sulfuric 66° Be com'l 9-lb. bottle.....	....	.07	Alcohol Ethylic denatured.. ..	....	.25
			Alcohol Ethylic 95% U.S.P.. ..	.10	.55
			Alcohol Ethylic absolute....	.20	1.15
			Alcohol Methylic com'l.....	....	.20
			Alcohol Methylic 95%.....	....	.25
			Alcohol Methylic Absl.....	.15	.80

	Oz.	Lb.		Oz.	Lb.
Alcohol Propylic c.p.....	....	....	Aluminum Ammon Sulfate		
Alcohol Wood see Alcohol			powd. techn.....	....	\$ 0.30
Methylic .....	....	....	Aluminum Ammon Sulfate		
Aldehyde see Aldehyde Eth-			c.p. ....	....	.35
ylic .....	....	....	Aluminum Benzoate pure...\$	0.75	....
Aldehyde Acetic see Alde-			Aluminum Bromide pure....	.55	....
hyde Ethylic.....	....	....	Aluminum Carbide.....	.20	1.40
Aldehyde Ammonia cryst.			Aluminum Chloride cryst. c.p.	.20	.90
c.p. ....	....	....	Aluminum Chloride sub. c.p..	.25	1.90
Aldehyde Ethylic conc.....\$	0.35	\$ 2.60	Aluminum Chromate pure...	....	....
Aldehyde Formic see For-			Aluminum Fluoride c.p.....	.25	1.65
maldehyde .....	....	....	Aluminum Hydrate ppt.		
Aleuronat .....	.10	.75	techn. ....	....	.70
Alizarine Paste about 20%..	.35	3.50	Aluminum Hydrate ppt. pure	.15	.90
Alizarine Sod. Mono-Sulfo-			Aluminum Hydrate ppt. c.p..	.25	1.80
nate .....	....	....	Aluminum Nitrate cryst. c.p.	.15	.90
Alkannin .....	.75	....	Aluminum Nitrate dry c.p..	.20	1.25
Alloxan .....	....	....	Aluminum Oleate.....	....	....
Alloys:			Aluminum Oxalate c.p.....	.20	1.70
Auer Metal.....	2.50	15.00	Aluminum Oxide anhydr		
Babbitt's Metal.....	.15	.80	techn. ....	.20	1.00
Devarda for reduction....	.25	2.00	Aluminum Oxide anhydr. c.p.	.25	1.25
Fusible Rose's.....	.40	4.00	Aluminum Palmitate pure...	.15	.70
Fusible Wood's M.P. about			Aluminum Phosphate c.p....	.25	1.70
73-74° .....	.40	4.00	Aluminum Potass. Sulfate		
Pewter .....	.15	.75	cryst. techn.....	....	.30
Type .....	.10	.60	Aluminum Potass. Sulfate		
Allylthiocyanate (Oil Mus-			pure .....	....	.35
tard artif.).....	.30	3.00	Aluminum Potass. Sulfate		
Aloin .....	.20	1.65	cryst. c.p.....	.10	.40
Alphanaphthol recryst.....	.45	....	Aluminum Potass. Sulfate		
Alphanaphthylamine see			powd. c.p.....	.15	.60
Naphthylamine A.....	....	....	Aluminum Potass. Sulfate		
Alum see Alumin. Potass.			dry cryst. c.p.....	.15	.75
sulfate .....	....	....	Aluminum Potass. Sulfate		
Alum Ammonia see Alumin.			burnt alum.....	....	.45
Ammon. Sulfate.....	....	....	Aluminum Sodium Chloride		
Alum Chrome see Chrom.			cryst. c.p.....	.20	1.15
and Potass. Sulfate.....	....	....	Aluminum Sodium Chloride		
Alum Rubidium.....	....	....	anhydr. c.p.....	.30	2.50
Alum Sodium see Alumin and			Aluminum Sodium Sulfate		
Sodium Sulfate.....	....	....	techn. ....	....	.35
Alumina see Aluminum Ox-			Aluminum Sodium Sulfate		
ide .....	....	....	cryst. c.p.....	.15	.80
Aluminum Metal bars.....	.15	1.10	Aluminum Sodium Sulfate		
Aluminum Metal foil 0.006-			anhydrous c.p.....	.15	.90
inch .....	.20	1.65	Aluminum Solder.....	.25	1.75
Aluminum Metal mossy....	.20	1.75	Aluminum Sulfate techn.....	....	.25
Aluminum Metal powd.....	.20	1.90	Aluminum Sulfate cryst. c.p.	.10	.30
Aluminum Metal finest pow-			Aluminum Sulfate anhydr.		
der .....	.30	2.50	c.p. ....	.15	.70
Aluminum Metal sheet.....	.15	1.40	Aluminum Sulfide c.p.....	.25	1.70
Aluminum Metal sticks....	.15	1.20	Aluminum Tartrate c.p.....	.35	2.50
Aluminum Metal turnings..	.15	1.40	Alundum 30, 40 or 60 mesh..	.20	.80
Aluminum Metal wire.....	.20	1.65	Alundum cement.....	....	.20
Aluminum Acetate c.p.....	.20	1.30	Amidoacetophenone-Para ...	....	....
Aluminum Acetate c.p. solu-			Amidobenzoic Acid-Ortho		
tion 8%.....	....	.40	techn. ....	....	....
Aluminum Acetotartrate			Amidol (Diaminophenol Hy		
cryst. ....	.20	2.25	drochloride) .....	.75	....
Aluminum Ammon Sulfate			Amido Phenol Para.....	....	....
cryst. techn.....	....	.25	Amido Phenol Para Hydro-		
			chloride .....	....	....

	Oz.	Lb.		Oz.	Lb.
Ammonia Alum see Alumin.			Ammonium Nitrate fused c.p. \$	0.15	\$ 0.85
Ammon. Sulfate.....			Ammonium Nitrite liquid...	.15	.90
Ammonium Acetate c.p....	\$ 0.15	\$ 1.25	Ammonium Oxalate c.p....	.20	1.60
Ammonium Arsenate c.p....	.20	1.75	Ammonium Oxalate c.p. spe-		
Ammonium Arsenite c.p....	.20	1.75	cial .....	.25	2.10
Ammonium Benzoate.....			Ammonium Persulfate c.p..	.20	1.25
Ammonium Bicarbonate c.p.	.15	.80	Ammonium Phenolsulfonate	.20	....
Ammonium Bichromate c.p..	.25	1.75	Ammonium Phosphate com'l		
Ammonium Bifluoride c.p...	.25	1.65	Di. ....	.10	.70
Ammonium Binoxalate c.p..	.20	1.30	Ammonium Phosphate sec.		
Ammonium Biphosphate c.p.	.20	1.10	c.p. ....	.15	1.00
Ammonium Bisulfate c.p....	.15	.70	Ammonium Phosphate prim.		
Ammonium Bisulfite solut.			c.p. ....	.20	1.15
c.p. ....	.20	1.50	Ammonium Phosphomolyb-		
Ammonium Bitrtrate c.p....	.25	2.25	date c.p.....	1.50	....
Ammonium Borate c.p.....	.20	1.65	Ammonium Picrate c.p.....	.50	4.00
Ammonium Bromide c.p....	.30	2.40	Ammonium Potass. Phos-		
Ammonium Carbonate pure..	.10	.30	phate c. p.....	.20	1.50
Ammonium Carbonate powd.	.10	.35	Ammonium Salicylate U.S.P.	.40	4.25
Ammonium Carbonate c.p...	.10	.35	Ammonium Selenate.....		....
Ammonium Carbonate cubes	.15	.65	Ammonium Sodium Phos-		
Ammonium Chloride lump..		.35	phate c.p.....	.15	.80
Ammonium Chloride granul.			Ammonium Succinate cryst.		....
techn. ....		.30	Ammonium Sulfate techn....		.25
Ammonium Chloride granul.			Ammonium Sulfate c.p.....	.10	.35
pure .....	.10	.35	Ammonium Sulfide see Am-		
Ammonium Chloride c.p....	.15	.45	mon. hydrosulfide.....		....
Ammonium Chloride c.p. spe-			Ammonium Sulfite cryst. c.p.	.25	2.25
cial .....	.15	.85	Ammonium Sulfocyanate		
Ammonium Chromate neutr.			pure .....	.30	3.00
c.p. ....	.35	2.75	Ammonium Sulfocyanate c.p.	.35	3.25
Ammonium Chromium Sul-			Ammonium Tartrate pure...	.20	1.25
fate c.p.....	.30	2.40	Ammonium Tartrate c.p....	.25	1.75
Ammonium Citrate c.p.....	.30	2.40	Ammonium Tetroxalate c.p.	.25	1.75
Ammonium Fluoride granu-			Ammonium Thiocyanate see		
lar .....	.20	.90	Ammon. Sulfocyanate....		....
Ammonium Fluoride cryst.			Ammonium Thiosulfate see		
c.p. ....	.30	2.20	Ammon. Hyposulfite.....		....
Ammonium Formate c.p..			Ammonium Tungstate.....		....
Ammonium Hydrate 26°....		.20	Ammonium Valerate.....		....
Ammonium Hydrate 10x4-lb.			Ammonium Vanadate c.p....	1.90	....
bottles .....		.12	Amygdalin .....		....
Ammonium Hydrate 90-lb.			Amyl Acetate techn.....	.15	1.25
carboy .....		.11	Amyl Acetate pure.....	.20	1.60
Ammonium Hydrate 90 c.p.		.25	Amyl Alcohol Tertiary see		
Ammonium Hydrate .90 c.p.			Amylene Hydrate.....		....
10x4-lb. bottles.....		.18	Amyl Butyrate .....	.55	5.50
Ammonium Hydrate .90 c. p.			Amyl Hydrate see Alcohol		
90-lb. carboy.....		.17½	Amylic .....		....
Ammonium Hydrosulfide...	.15	.40	Amyl Hydride see Pentane..		....
Ammonium Hypophosphite.	.25	2.50	Amyl Nitrate.....	.50	....
Ammonium Hyposulfite c.p..	.20	1.35	Amyl Nitrite.....	.50	....
Ammonium Iodate c.p.....		....	Amyl Valerate.....	1.20	11.00
Ammonium Iodide c.p.....	.70	6.75	Amylacetis Ether see Amy-		
Ammonium Lactate .....		....	lacetate .....		....
Ammonium Molybdate c.p..	.70	6.75	Amylene c.p.....		....
Ammonium Molybdate c.p.			Amylene Hydrate (Amyl Al-		
solut.		2.00	cohol Tertiary).....		....
Ammonium Muriate see Am-			Anethol (Anise Camphor)..		....
mon. Chloride.....		....	Aniline pure.....	.25	1.75
Ammonium Nitrate.....		.40	Aniline c.p.....	.30	2.00
Ammonium Nitrate fused					
pure .....		.50			
Ammonium Nitrate c.p....	.15	.50			

	Oz.	Lb.		Oz.	Lb.
Aniline Acetate.....			Antimony (ous)		
Aniline Hydrochloride c.p.....			Chloride Tri—c.p.....	\$ 0.25	\$ 2.10
Aniline Nitrate.....			Antimony Fluoride c.p.....	.30	2.35
Aniline Oil see Aniline pure.....			Antimony (ic) Oxide		
Aniline Oxalate.....			Penta— c.p.....	.25	1.55
Aniline Salt see Aniline hy-			Antimony (ous) Oxide Tri—		
drochloride			c.p. ....	.25	1.70
Aniline Sulfate.....			Antimony Oxychloride c.p..	.25	1.75
Aniline Dyes			Antimony Potass. Sulfurated		
Black, Nigrosine, soluble in			(Liver Antimony).....	.25	1.75
water	\$ 1.25		Antimony Potass. Tartrate		
Black, Nigrosine, soluble in			c.p. ....	.20	2.25
alcohol	1.25		Antimony Sulfate c.p.....	.20	1.50
Blue, soluble in alcohol...	1.50		Antimony (ous) Sulfide Tri—		
Blue, methyl.....	1.50		black c.p.....	.30	2.25
Blue methylene.....	1.25		Antimony (ic) Sulfide		
Brown, Bismarck.....	1.25		Penta—yellow c.p.....	.20	2.25
Green, Malachite.....	1.25		Antimony (ous) Sulfide		
Orange, Methyl			Oxy—red (Kermes miner-		
(Helianthin)	1.50		al) .....	.20	2.25
Orange, Methyl (indicator)	2.00		Antipyrin		
Red, Aurine.....	1.25		(Dimethyloxyquinizone) .	2.50	
Aniline Dyes			Apiol fluid green.....	.40	
Red, Congo.....	1.25		Apomorphine Hydrochloride		
Red, Coralline.....	1.25		cryst. U.S.P.....		
Red, Eosine blueish.....	1.25		Aqua Ammonia see Ammon.		
Red, Eosine yellowish....	1.25		Hydrate		
Red, Erythrosine.....	1.75		Aqua Fortis see Acid Nitric.		
Red, Fuchsine.....	1.25		Aqua Regia see Acid		
Red, Iodeosine.....	2.00		Nitrohydrochloric		
Red, Magenta.....	1.25		Arabinose cryst. (Pectin		
Red, Rosaniline			Sugar)		
hydrochloride	1.25		Arbutin		
Red, Safranine T.....	1.25		Arecoline Hydrobromide....		
Red, Scarlet.....	1.25		Argols see Potass. Bitrtrate		
Red, Scarlet Biebrich.....	1.25		Aristochin (Diquinine Car-		
Violet, Crystal.....	1.25		bonic Ether).....	2.75	
Violet, Gentian.....	1.50		Arrowroot see Starch.....		
Violet, Hoffmann.....	1.25		Arsenic Metal.....	.20	1.30
Violet, Methyl B.....	1.25		Arsenic Metal powd.....	.10	.50
Yellow, Chrysanine.....	1.50		Arsenic Bromide.....	.60	
Yellow, Chrysoidine.....	1.25		Arsenic Chloride.....	.55	
Yellow, Martins.....	1.25		Arsenic Iodide U.S.P.....	.80	
Yellow, Primuline.....	1.25		Arsenic Sulfide red powd....	1.00	
Anthracene 20% com'l.....			Arsenic Sulfide yellow		
Anthracene Kahlbaum spec.			powder	1.00	
Anthraquinone			Arsenic (ous) Oxide see Acid		
Anthrasol (Purif. colorless			Arsenous		
tar) .....	.75		Arsenic (ic) Oxide see Acid		
Antifebrin			Arsenic		
(Phenylacetamide) .....	.25		Arsenic White see Acid		
Antimony Metal (Regulus			Arsenous		
Antimony) .....	.15	\$ 0.85	Asbestos shore fibre, Ital... .	.30	2.25
Antimony Metal powd.....	.20	1.00	Asbestos long fibre, Ital....	.60	5.90
Antimony Anhydride see			Asbestos short fibre washed		
Antimony (ic) Oxide.....			in acid, Ital.....	.35	2.65
Antimony (ic) Chloride			Asbestos short fibre washed		
Penta—c.p. ....	.25	2.10	and ignited, Ital.....	.40	2.75
			Asbestos long fibre washed in		
			acid, Ital.....	.60	6.00
			Asbestos long fibre washed		
			and ignited.....	.65	7.00
			Asbestos platinized 5%.....	6.50	
			Asbestos platinized 10%....	12.75	

	Oz.	Lb.		Oz.	Lb.
Asphaltum Egyptian.....	\$ 0.10	\$ 0.40	Barium Tartrate c.p.....	\$ 0.55	\$ 5.50
Aspirin see Acetylsalicylic acid .....	....	....	Barium Thiocyanate c.p.....	....	....
Atropine Alkaloid U.S.P.....	....	....	Barium Thiosulfate Barium hyposulfite .....	.20	1.40
Atropine Sulfate U.S.P.....	....	....	Barium Tungstate.....	.60	....
Auer Metal (Iron Cerium Alloy) see Alloys.....	....	....	Barytes see Barium sulfate..	....	....
Auripigment see Arsenic sulfide yellow.....	....	....	Battery Fluid.....	....	.15
Azobenzene (Azobenzol)...	....	....	Bebeerine Hydrochloride...	2.90	....
Azolitmin (indicator).....	5.75	....	Bebeerine Sulfate.....	2.90	....
			Beeswax see Wax.....	....	....
			Benzaldehyde (Oil bitter almonds artif.).....	.75	8.00
Balsam, Canada in Xylol....	.50	....	Benzidine (Paradiaminodiphenyl) techn.....	.60	5.25
Balsam Fir.....	.15	.65	Benzidine c.p.....	.60	5.25
Balsam Peru.....	.60	6.50	Benzin .....	....	.20
Barium Metal.....	....	....	Benzol (Benzene) 90%.....	....	.35
Barium Acetate c.p.....	.20	1.20	Benzol (Benzene) c.p.....	.20	1.10
Barium Borate c.p.....	.20	1.10	Benzol (Benzene) c.p. cryst. (thiophene free).....	....	....
Barium Bromide c.p.....	.75	....	Benzol (Benzene) hexochloride .....	....	....
Barium Carbonate techn....	.10	.30	Benzonaphtol (Beta Naphtol Benzoate) .....	....	....
Barium Carbonate c.p.....	.15	1.00	Benzophenone (Diphenyl Ketone) .....	....	....
Barium Carbonate c.p. special .....	.20	1.30	Benzoylchloride .....	....	....
Barium Chlorate powd....	.15	1.50	Benzoyl Hydride see Benzaldehyde.....	....	....
Barium Chlorate cryst. c.p..	.20	1.80	Benzoyl Oxide see (Acid) Benzoic anhydride.....	....	....
Barium Chloride pure.....	....	.30	Benzyl Acetate.....	....	....
Barium Chloride c.p.....	.10	.40	Benzyl Alcohol.....	....	....
Barium Chloride anhydrous c.p. ....	.15	.80	Benzyl Benzoate.....	....	....
Barium Chromate c.p.....	.20	1.10	Benzyl Chloride c.p.....	.60	5.00
Barium Dioxide pure.....	.10	.80	Beryllium Carbonate.....	....	....
Barium Dioxide c.p.....	.15	1.15	Beryllium Chloride.....	....	....
Barium Fluoride c.p.....	.20	1.25	Beryllium Nitrate.....	....	....
Barium Hydroxide cryst. techn. ....	....	.25	Beryllium Sulfate.....	....	....
Barium Hydroxide cryst. pure .....	.10	.50	Betanaphthol .....	.50	5.75
Barium Hydroxide cryst. c.p.	.15	.65	Betol (Beta Naphthol salicylate) .....	.85	....
Barium Hydroxide anhydr. c.p .....	.20	1.00	Bismal (Bismuth Methylene digallate) .....	.95	....
Barium Hyposulfite c. p.....	....	....	Bismuth Metal.....	.60	6.00
Barium Iodate c.p.....	.90	....	Bismuth Metal powd.....	.65	6.50
Barium Iodide c.p.....	.90	....	Bismuth Acetate c.p.....	.80	8.50
Barium Manganate c.p.....	.40	....	Bismuth Arsenate c.p.....	1.10	....
Barium Molybdate c.p.....	.70	....	Bismuth Benzoate.....	.90	....
Barium Nitrate pure.....	....	.45	Bismuth Betanaphthol (Orphol) .....	.65	....
Barium Nitrate c.p.....	.15	.70	Bismuth Carbonate (Bis. Subcarbon.) c.p.....	.60	6.00
Barium Nitrate powder c.p..	.15	.75	Bismuth Chloride c.p.....	.60	6.00
Barium Nitrate c.p.....	....	....	Bismuth Citrate U.S.P.....	.55	5.50
Barium Oxalate c.p.....	.20	1.60	Bismuth Hydroxide c.p.....	.60	6.00
Barium Oxide pure Mono...	.15	.95	Bismuth Iodide c.p.....	1.10	....
Barium Peroxide see Barium Dioxide .....	....	....	Bismuth Lactate.....	....	....
Barium Phosphate c.p.....	.25	2.20	Bismuth Nitrate cryst. c.p..	.45	4.35
Barium Silicate c.p.....	.20	1.60	Bismuth Oxide c.p.....	.60	6.00
Barium Sulfate techn.....	....	.25	Bismuth Oxide tetra—c.p...	.75	7.75
Barium Sulfate c.p. powder..	.15	.50			
Barium Sulfide techn.....	....	.40			
Barium Sulfide pure.....	.15	1.10			
Barium Sulfite c.p.....	.15	1.15			

	Oz.	Lb.		Oz.	Lb.
Bismuth Oxychloride c.p....	\$ 0.60	\$ 6.00	Caesium Metal.....	....	....
Bismuth Oxyiodide.....	....	....	Caesium Alum.....	....	....
Bismuth Oxyiodogallate see			Caesium Chloride.....	....	....
Airol .....	....	....	Caffeine pure.....	\$ 1.60	....
Bismuth Phosphate c.p.....	1.10	....	Caffeine Benzoate.....	1.75	....
Bismuth Phosphate soluble..	1.30	....	Caffeine Citrate.....	1.00	....
Bismuth Salicylate basic			Caffeine Hydrobromide....	1.50	....
U.S.P. ....	.60	6.50	Caffeine Hydrochloride....	1.85	....
Bismuth Subbenzoate.....	.85	....	Caffeine Salicylate.....	1.50	....
Bismuth Subcarbonate U.S.P.	.55	5.75	Caffeine Sodium Benzoate..	1.50	....
Bismuth Subgallate pure....	.45	4.75	Caffeine Sodium Salicylate..	1.25	....
Bismuth Subiodide see Bis-			Calcium Metal.....	1.10	....
muth Oxyiodide.....	....	....	Calcium Acetate grey techn.	....	\$ 0.25
Bismuth Subnitrate c.p.....	.60	6.00	Calcium Acetate c.p.....	.15	.95
Bismuth Sulfate c.p.....	.65	6.50	Calcium Aluminate.....	....	....
Bismuth Sulfide c.p.....	1.10	....	Calcium Arsenate c.p.....	.25	1.85
Bismuth Tannate.....	.45	4.50	Calcium Arsenite c.p.....	.25	1.85
Bismuth Valerianate.....	.95	....	Calcium Bichromate.....	....	....
Bismuth and Ammonium			Calcium Biphosphate.....	.15	.95
Citrate U.S.P.....	.65	6.50	Calcium Bisulfite solut. c.p..	.10	.50
Bisol see Bismuth Phosphate			Calcium Borate c.p.....	.15	1.10
soluble .....	....	....	Calcium Bromide c.p.....	.30	2.90
Bitumen see Asphalt.....	....	....	Calcium Carbide.....	....	.30
Black Lead see Graphite....	....	....	Calcium Carbonate, precipi-		
Bleaching Powder see Calc.			tated chalk.....	....	.20
hypochlorite .....	....	....	Calcium Carbonate.....	....	.10
Bone Ash.....	....	.15	Calcium Carbonate c.p.....	.15	.70
Borax see Sodium Borate....	....	....	Calcium Carbonate c.p.		
Borneou .....	....	....	special .....	.20	1.30
Bromalin (Bromethylformin)	1.65	....	Calcium Carbonate, Iceland		
Bromine .....	....	3.00	Spar .....	.40	4.00
Bromobenzol .....	....	....	Calcium Chloride lump,		
Bromoform .....	.70	7.00	com'l .....	....	.15
Bromural (Monobrom-			Calcium Chloride for		
isovaleryl-urea a.).....	2.20	....	desiccators .....	.10	.30
Brucine	2.00	....	Calcium Chloride cryst. c.p..	.10	.45
Brucine Sulfate.....	2.00	....	Calcium Chloride cryst. neu-		
Butyl-Chloralhydrate .....	.80	....	tral c.p.....	.15	.65
Butyrin, mono.....	....	....	Calcium Chloride anhydr.		
			sticks .....	.15	.65
			Calcium Chloride anhydr.		
			gran. c.p.....	.15	.60
Cadmium Metal sticks.....	.30	3.00	Calcium Chromate c.p.....	.20	1.65
Cadmium Metal powd.....	.30	3.00	Calcium Citrate c.p.....	.25	2.20
Cadmium Acetate c.p.....	.35	3.25	Calcium Ferrocyanide c.p...	.30	2.80
Cadmium Ammon. Bromide			Calcium Fluoride native		
c.p. ....	....	....	powder .....	....	.15
Cadmium Bromide c.p.....	.50	5.00	Calcium Fluoride c.p.....	.20	1.30
Cadmium Carbonate c.p.....	.35	3.25	Calcium Formate c.p.....	....	....
Cadmium Chloride cryst. c.p.	.25	2.30	Calcium Glycerophosphate..	.30	3.00
Cadmium Chloride anhydr.			Calcium Hydrate pure.....	.15	.55
c.p. ....	.40	3.75	Calcium Hypochlorite techn.	....	.25
Cadmium Fluoride c.p.....	.50	5.25	Calcium Hypochlorite c.p..	.15	.90
Cadmium Hydrate c.p.....	.50	5.00	Calcium Hypophosphite		
Cadmium Iodide c.p.....	.70	7.00	U.S.P. ....	.20	1.35
Cadmium Nitrate c.p.....	.30	2.75	Calcium Iodate.....	....	....
Cadmium Oxalate c.p.....	.55	5.50	Calcium Iodide c.p.....	.90	....
Cadmium Oxide, c.p.....	.55	5.50	Calcium Lactate soluble....	.25	2.25
Cadmium Phosphate c.p.....	.55	5.65	Calcium Lactophosphate		
Cadmium Potass. Iodide....	....	....	cryst. soluble.....	.35	3.00
Cadmium Sulfate c.p.....	.25	2.50	Calcium Lactophosphate		
Cadmium Sulfide c.p.....	.35	3.45	powder soluble.....	.40	3.50

	Oz.	Lb.		Oz.	Lb.
Calcium Nitrate c.p.....	\$ 0.15	\$ 0.90	Ceresin Yellow.....		\$ 0.40
Calcium Nitrite cryst.....			Cerium Metal tech.....		
Calcium Oxalate c.p.....	.20	1.60	Cerium Chloride c.p.....		
Calcium Oxide from Marble.....		.20	Cerium Fluoride c.p.....		
Calcium Oxychlorite see			Cerium Nitrate.....		
Calc. Hypochlorite.....			Cerium Nitrate c.p.....		
Calcium Permanganate.....	.60		Cerium Oxalate c.p.....		
Calcium Peroxide.....	.30	2.80	Cerium Oxide c.p.....		
Calcium Phosphate crude,			Cerium (ic) Sulfate.....		
see Bone ash.....			Cerium Tungstate c.p.....		
Calcium Phosphate			Charcoal Animal granul.....	\$ 0.10	.20
secondary c.p.....	.15	.90	Charcoal Animal purif. moist	.15	.65
Calcium Phosphate primary			Charcoal Animal c.p. powd..	.30	3.00
c.p. ....	.20	1.20	Charcoal Blood acid washed	.35	3.00
Calcium Phosphate tertiary			Charcoal Wood powd.....		.15
c.p. ....	.20	1.10	Charcoal Wood sticks.....		
Calcium Phosphide pr.....	.30	2.75	Chinolin		
Calcium Silicate pure.....	.20	1.10	Chinone		
Calcium Silico Fluoride c.p..	.25	2.10	Chloracetone (Monochloro-		
Calcium Sulfate, crude			acetone)		
(Gypsum) .....		.12	Chloral Alcoholate.....		
Calcium Sulfate (Gypsum)			Chloralhydrate cryst.....	.30	2.50
powder .....		.20	Chloralose (Anhydrogluco-		
Calcium Sulfate, calcinated			chloral)	6.50	
(Plaster Paris).....		.10	Chloranil		
Calcium Sulfate c.p.....	.10	.40	Chlorbenzol		
Calcium Sulfate anhyrd. c.p.	.15	.95	Chlorethane, penta.....	.15	.60
Calcium Sulfide pure.....	.15	.55	Chlorethane, tetra.....	.15	.65
Calcium Sulfide luminous...	.40	4.00	Chlorinated Lime see Calc.		
Calcium Sulfite c.p.....	.15	.55	hypochlorite		
Calcium Tartrate c.p.....	.25	2.25	Chlorine cubes for generat-		
Calomel see Mercury (ous)			ing Cl.....		.45
chloride			Chlorine Water.....		.40
Camphor .....	.20	1.15	Chloroform pure U.S.P.....	.15	.95
Camphor Monobromated			Chloroform pure Squibbs...		1.25
cryst. ....	.45	4.25	Chloroform purif. for anaes-		
Camphoric Anhydride see			thesia .....	.15	.95
acid camphoric anhydride.			Chloroform c.p.....	.20	1.50
Canada Balsam see Balsam			Chlorophyll techn. Fat and		
Fir			Oil soluble.....	1.25	
Cannabine Tannate.....	5.50		Chlorophyll Alcohol soluble	1.00	
Cantharidin			Chlorophyll Water sol.....	1.00	
Carbamid (see Urea).....			Cholesterin		
Carbon Dichloride.....			Chrome Alum see Chrom.		
Carbon Dioxide see Acid			Potass. sulfate.....		
Carbonic			Chrome Green see Chrom.		
Carbon Disulfide pure.....		.30	oxide		
Carbon Disulfide c.p.....		.50	Chrome Yellow see Lead		
Carbon Tetrachloride pure..		.50	chromate ppt.....		
Carbon Tetrachloride c.p.....	.20	.75	Chromium Metal.....		
Carborundum cryst.....		1.10	Chromium Acetate basic c.p.	.50	5.50
Carborundum powd.....			Chromium Ammon. Sulfate		
Carmine .....	.60	5.00	c.p. solut.....	.20	1.35
Carnauba wax.....	.20	1.10	Chromium Borate c.p.....	.40	
Carvol			Chromium Bromide c.p.....	.40	
Casein .....	.15	.60	Chromium Carbonate basic		
Casein acc. to Hammarsten.			c.p. ....	.35	3.00
Catechol (Pyrocatechin)....	.75		Chromium (ic) Chloride		
Catechu .....		.40	subl.	1.20	
Catechu powd.....		.60	Chromium (ic) Chloride dry		
Ceresin Black (Ozokerite)..		.50	c.p. ....	.25	1.80
Ceresin White.....		.50			

	Oz.	Lb.		Oz.	Lb.
Chromium (ic) Chloride solut 50% c.p.....	\$ 0.20	\$ 1.10	Colchicine Sylicylated.....	....	....
Chromium Fluoride c.p.....	.35	3.00	Collodion U.S.P.....	....	\$ 0.70
Chromium Hydroxide dry...	.15	1.00	Collodion U.S.P. flexible....	....	.70
Chromium Hydroxide c.p...	.20	1.50	Cologne Spirit see Alcohol		
Chromium Nitrate dry c.p...	.30	2.35	Ethylic .....	....	....
Chromium Nitrate solut. 40% c.p. ....	.20	1.30	Colophony see Rosin.....	....	....
Chromium Oxalate c.p.....	.20	1.75	Coniine Alkaloid pure.....	....	....
Chromium Oxide c.p.....	.30	2.75	Coniine Hydrobromide....	....	....
Chromium Phosphate c.p....	.25	1.90	Convallamarin .....	....	....
Chromium Phosphate tri (see Acid chromic).....	....	....	Convallarin .....	....	....
Chromium Potass. Sulfate techn. (Chromic alum)....	....	1.10	Copper Metal, gran.....	\$ 0.15	.85
Chromium Potass. Sulfate c.p. (Chromic alum).....	.15	1.50	Copper Metal, foil .002 inch.	.20	1.60
Chromium Sulfate dry c.p...	.30	2.50	Copper Metal, sheet.....	.15	.75
Chromium Sulfate 30% solut. c.p. ....	.20	1.10	Copper Metal, turnings....	.15	.90
Chrysarobin (Acid chrysophanic) .....	....	....	Copper Acetate basic, refined powder .....	.20	1.75
Cinchonidine Alkaloid.....	1.75	....	Copper Acetate neutral pure cryst. ....	.15	1.25
Cinchonidine Sulfate U.S.P.	1.25	....	Copper Acetate c.p.....	.20	1.55
Cinchonine Crystals.....	.60	....	Copper Acetoarsenite (Paris Green) c.p.....	.35	3.00
Cinchonine Hydrochloride...	.75	....	Copper Ammon. Chloride c.p.	.15	.65
Cinchonine Sulfate U.S.P....	.50	....	Copper Ammon. Sulfate c.p.	.15	.65
Citral (Aldehyd in lemon oil) .....	....	....	Copper Arsenate c.p.....	.20	2.00
Cobalt Metal cubes.....	.80	....	Copper Arsenite c.p.....	.25	1.50
Cobalt Metal reduced powd..	....	....	Copper Benzoate c.p.....	....	....
Cobalt Acetate c.p.....	.45	4.40	Copper Bichloride see Copper (ic) Chloride.....	....	....
Cobalt Ammonium Chloride c.p. ....	.40	3.50	Copper Borate c.p.....	.25	2.40
Cobalt Ammon. Sulfate c.p...	.30	2.75	Copper Bromide c.p.....	.70	....
Cobalt Arsenate c.p.....	1.00	....	Copper, Carbonate Ppt.....	....	.55
Cobalt Bromide c.p.....	1.00	....	Copper Carbonate moist, pure .....	....	.50
Cobalt Carbonate c.p.....	.35	3.25	Copper Carbonate c.p.....	.15	1.50
Cobalt Chloride c.p.....	.30	2.80	Copper (ic) Chloride c.p....	.15	.85
Cobalt Chloride Ni free c.p..	1.35	....	Copper (ic) Chloride anhydr. c.p. ....	.15	1.10
Cobalt Chromate c.p.....	.50	5.00	Copper (ous) Chloride techn.	.20	1.40
Cobalt Hydroxide c.p.....	.40	4.00	Copper (ous) Chloride c.p...	.25	1.65
Cobalt Nitrate c.p.....	.30	2.70	Copper Chromate c.p.....	....	....
Cobalt Nitrate Ni free c.p...	1.40	....	Copper Citrate.....	....	.40
Cobalt Nitrate anhydr. c.p..	.35	3.20	Copper Cyanide c.p.....	.30	....
Cobalt Oxalate c.p.....	.45	4.00	Copper Ferrocyanide.....	....	....
Cobalt Oxide c.p.....	.40	3.35	Copper Fluoric c.p.....	.20	1.50
Cobalt Oxide from Nitrate..	.50	4.50	Copper Formate c.p.....	.30	2.50
Cobalt Phosphate c.p.....	1.10	....	Copper Hydroxide c.p.....	.20	1.50
Cobalt Sulfate c.p.....	.25	2.10	Copper (ous) Iodide c.p....	1.00	....
Cobalt Sulfate anhydr. c.p...	.30	2.50	Copper (ous) Monochloride see Copper (ous) Chloride .....	....	....
Cocaine Alkaloid U.S.P....	6.50	....	Copper Nitrate techn.....	.10	.60
Cocaine Hydrochloride....	5.50	....	Copper Nitrate c.p.....	.15	.80
Cocoa Butter.....	....	.90	Copper Oleate c.p.....	.30	2.20
Cochineal .....	.20	1.70	Copper Oxalate c.p.....	.30	2.50
Cochineal powd.....	.25	2.00	Copper Oxide black fine c.p.	.20	1.50
Codeine Alkaloid cryst.....	13.50	....	Copper Oxide black coarse c.p. ....	.20	1.60
Codeine Hydrochloride.....	12.50	....	Copper Oxide red c.p.....	.35	3.25
Codeine Nitrate.....	12.50	....	Copper Oxide c.p. spec....	.25	1.75
Codeine Phosphate.....	11.50	....	Copper Oxide wire c.p.....	.25	1.60
Codeine Sulfate.....	12.50	....	Copper Pentammoniate c.p..	.20	1.25
Colchicine .....	....	....	Copper Phosphate c.p.....	.30	2.50

	Oz.	Lb.		Oz.	Lb.
Copper Potass. Chloride c.p.	\$ 0.15	\$ 1.25	Diacetin		
Copper Potass. Sulfate c.p.	.15	1.25	Diacetyldioxim (Dimethylglyoxim)	\$ 8.00	
Copper Silicate c.p.	.15	.90	Diacetylmorphine pure.....	12.50	
Copper Subacetate see Copper Acetate basic.....			Diamidoazobenzol		
Copper Suboxide see Copper Oxide red.....			Diamidophenol Hydrochloride see Amidol.....		
Copper Sulfate cryst. techn.		.35	Diamond Ink.....	.50	
Copper Sulfate techn. powd.		.55	Diastase of Malt medic.....	.60	\$ 7.75
Copper Sulfate cryst. pure..	.15	.60	Diatomaceous Earth see Infusorial earth.....		
Copper Sulfate cryst. c.p.	.15	.70	Dichloracetone		
Copper Sulfate anhydr. c.p.	.20	1.20	Dichlorethylene		
Copper Sulfide c.p.	.25	1.60	Dicyandiamid		
Copper Sulfite c.p.			Dicyandiamidin Sulfate.....		
Copper Tartrate c.p.	.25	2.00	Didymium Nitrate.....		
Copper Thiocyanate c.p.	.45	4.00	Diethylamine		
Copperas see Iron (ous) sulfate	50		Diethylamine Hydrochloride		
Corallin (indicator).....	.50		Digalen (Sol. Digitoxin)....		
Cornutine Citrate.....			Digipuratum powder.....		
Corrosive Sublimate see Mercury (ic) Chloride.....			Digitalin vedum.....		
Cotoin Para.....	5.40		Digitalin German.....		
Cotoin True.....			Digitoxin		
Cotton absorbent.....		.50	Dimethylamidoazobenzene Para		
Cotton non-absorbent.....		.50	Dimethylamidobenzaldehyde Para		
Cotton Wool for culture tubes .....		.30	Dimethylaminobenzene	2.25	
Cream Tartar see Potass. Bitartrate			Dimethylaminobenzaldehyde Para	11.00	
Creolin Pearson's.....		.90	Dimethylaniline (Dimethylamido Benzol).....		
Creosote from Coal Tar....	.15	.60	Dimethylbenzene see Zylene.		
Creosote from Beechwood U. S. P.....	.45	4.50	Dimethylethylcarbinol see Amylene Hydrate.....		
Creosote carbonate.....	1.50		Dimethylglyoxime (Diectayldioxime)	8.00	
Cresol U.S.P.....		.60	Dimethylparaphenylenediamine HC1 (Paraamidodimethylaniline Hcl).....		
Cresol Meta.....			Dinitrobenzene .....	.45	
Cresol Ortho.....			Dionin (Ethylmorphine Hydrochloride)	15.00	
Cresol Para.....			Dioxyanthraquinone see Alizarine		
Crocus martis see Iron Oxide red			Dioxtriphenylphtalide see Phenolphthalein		
Croton Chloralhydrate (Butyl Chloralhydrate).....	.85		Dipenteneglycol see Terpinhydrate		
Cumarin	1.25		Diphenylamine		
Cumene (Cumol).....	.30	3.00	Diphenylamine Sulfate.....		
Cumene (Cumol) c.p.			Diphenylhydrazine Hydrochloride		
Curare			Diphenylketone see Benzophenone		
Curcumin cryst.....			Distilled Water.....		
Cymene (Cymol).....			Diuretin (Salicylate—Sodium Theobromine)	2.25	
Damar Gum.....	.15	.70	Dormiol 50% (Amylenechloral) .....	.55	
Daturine pure.....			Duboisine Sulfate.....		
Daturine Sulfate pure.....			Dulcit		
Delphinine			Dutch Metal leaf.....		
Dermatol see Bismuth subgallate			Dyes, Aniline and Phenol, see Aniline, etc.....		
Dextrin techn. yellow or white .....		.25			
Dextrin alc. ppt. c.p.	.50	5.75			
Dextrose (Glucose) white lump					
Dextrose (Glucose) pure....					
Dextrose (Glucose) anhydr. c.p. ....	.60	6.00			

	Oz.	Lb.		Oz.	Lb.
Eikonogen .....		....	Ethylene Bromide (Dibrom-ethane)	\$ 1.25	....
Elaterin U.S.P. ....		....	Ethylene Chloride (Dichlo-rethane) .....		....
Elaterium	\$ 2.50	....	Ethylidene Chloride .....		....
Emery fine, medium and coarse powd.		\$ 0.25	Ethylidenediethlic Ether see Acetal .....		....
Emetin Resinoid .....		....	Ethylmorphine Hydrochloride see Dionin .....		....
Emetin Alkaloid .....		....	Ethylurethane see Ethyl Carbamate .....		....
Emetine Hydrochloride .....		....	Eucalyptol .....	.20	\$ 1.60
Emulsin .....		....	Eugallol (Pyrogallol Monoacetate)	1.25	....
Epichlorhydrin (Chloropropylene Oxide) .....		....	Eugenol .....	.50	5.00
Epsom Salt see Magnes. Sulfate .....		....	Euphorin (Phenyl Urethane)	1.65	....
Ergotin Bonjean	1.35	....	Equinine (Quinine Carbonic Ether) .....		....
Erythrite (Erythrol) .....		....	Euresol (Resorcinol Monoacetate)	2.25	....
Eschka's Mixture c.p. ....	.25	2.00	Exalgine (Methylphenylacetamide) .....		....
Eserine Alkaloid (Physostigmine) .....		....	
Eserine Hydrobromide .....		....	Feldspar .....		.10
Eserine Hydrochloride .....		....	Ferric and Ferrous Salts see Iron		
Eserine Salicylate U.S.P. ....		....	Ferratin powder	1.10	....
Eserine Sulfate U.S.P. ....		....	Ferropyrine (Ferric chloride-Antipyrine)	1.70	....
Eserine Pilocarpine .....		....	Fluorescein (Diresocinolph-talein)	1.05	....
Ether (Sulfuric) Ethylic Ether conc. U.S.P. 1900... ..	.10	.45	Fluorescein (Resorcinolph-talein)	1.90	....
Ether (Sulfuric) Ethylis washed .....	.20	1.00	Fluorspar see Calcium Fluoride native .....		....
Ether (Sulfuric) Ethylis dist. over Na .....	.25	1.40	Formaldehyde Medic. U.S.P. 40% (Oxymethylene) .....	.10	.40
Ether (Sulfuric) Ethylic Squibb .....		.95	Formaldehyde Solidified .....		....
Ether Acetic U.S.P. ....	.15	.90	Formamide (Methanamide) .....		....
Ether Acetic absol. c.p. ....	.25	1.70	Formin (Hexamethylenamine U.S.P.) .....	.20	1.45
Ether Amylacetic see Amyl Acetate .....		....	Formol see Formaldehyde .....		....
Ether Petrolic .....	.15	.50	Formonitrile see Acid Hydrocyanic .....		....
Ether Petrolic, Special .....	.20	.90	Fossil Flour see Infusorial earth .....		....
Ether Pyroacetic see Acetone .....		....	Fructose see Levulose .....		....
Ethyl Acetate see Ether Acetate .....		....	Fruit Sugar see Levulose .....		....
Ethyl Acetoacetate (Diacetic Ether) .....		....	Fullers earth .....		.10
Ethyl Benzoate .....		....	Furfurol (Pyromucic aldehyde) .....		....
Ethyl Bromide .....	.60	5.50	Fusel Oil see Alcohol Amylic .....		....
Ethyl Butyrate conc. ....		....	
Ethyl Butyrate absol. ....		....	Gaduol (Alc. Extr. Cod-Liver Oil)	1.25	....
Ethyl Carbamate (Ethyl Urethane) .....		....	Galactose c.p. (Lactoglucose) .....		....
Ethyl Chloride U.S.P. ....		....	Garantose refined (Benzosulfonide)	2.25	....
Ethyl Formate conc. ....	.30	2.75	Gasoline .....		.10
Ethel Hydroxide see Alcohol Ethylic .....		....	Gelatine White Gold Label ..	.20	1.20
Ethyl Hydrosulfide (Mercaptan-Ethyl) .....		....	Gelatine White Silver Label ..	.15	.90
Ethyl Iodide .....	.80	....	Gelatine powder .....	.10	.70
Ethyl Nitrite 50% .....		....	Gelseminine Alkaloid .....		....
Ethel Oxide see Ether Sulfuric .....		....	
Ether Salicylate .....	.60	5.75			
Ethyl Valerianate .....	.80	8.00			
Ethylamine solut. 33% .....		....	
Ethylaniline-Mono .....		....	

	Oz.	Lb.		Oz.	Lb.
Gelseminine Hydrochloride.			Homatropine Salicylate.....		
Geraniol			Homatropine Sulfate.....		
Glass Soluble see Potass. or			Hydracetin see Acetylph-		
Sodium silicate.....			nylhydrazine		
Glass Wool Bohemian coarse.\$ 0.45	\$ 4.80		Hydrastine Alkaloid.....	\$30.00	
Glass Wool Bohemian fine.. .50	5.60		Hydrastine Hydrochloride...	30.00	
Glucinum see Beryllium and			Hydrastine Sulfate.....	30.00	
Salts			Hydrstinine Hydrochloride.		
Glucose see Dextrose.....			Hydrazine Hydrate 50% so-		
Glycerin white U.S.P.....	.10	.90	lut.		
Glycerin c.p.....	.15	1.25	Hydrazine Hydrochloride...		
Glycine (Photo. develop.)...			Hydrazine Sulfate.....		
Glycoll (Aminoacetic acid).			Hydrogen Peroxide 3% = 10		
Glycogen			Vol. % U.S.P.....	.10	\$ 0.35
Glycophenol see Saccharine.			Hydrogen Peroxide 3% Mar-		
Glycosine see Saccharine....			chand .....		.85
Glycosal (Monosalicylic acid			Hydrogen Peroxide 30% =		
Glycerine ester).....	1.75		100 Vol. ½ c.p. (Perhy-		
Glycyrrhizin Ammoniated... .45	5.25		drol) .....	.75	7.50
Gold Leaf.....			Hydroquinone (Paradioxy ¹		
Gold Bromide mono-pure....			benzene) .....	.65	
Gold Bromide tri-pure.....			Hydroxybenzene see Acid		
Gold Chloride tri-pure.....	14.00		Carbolic		
Gold Cyanide mono-pure....			Hydroxylamine Hydrochlo-		
Gold Cyanide tri-pure.....			ride		
Gold Oxide tri-pure.....			Hydroxylamine Sulfate c.p..		
Gold Sodium Chloride.....	8.00		Hyoscine Hydrobromide....		
Grape Sugar see Glucose....			Hyoscine Hydrochloride....		
Graphite powder.....		.30	Hyoscine Sulfate.....		
Guaethol (Guaiacol Ethyl)..	1.65		Hyoscamine Alkaloid		
Guaiacol			amorph.		
Guaiacol Carbonate.....			Hyoscamine Alkaloid cryst..		
Guanidine (Carbamidine)			Hyoscamine Hydrobro-		
Carbonate			mide		
Gum Arabic white best.....	.15	.60	Hyoscamine Sulfate cryst...		
Gypsum native powd.....		.12			
Gypsum Calcined (Plaster					
Paris) .....		.10			
Hematoxylin pure cryst....			Iceland Spar for standardiz-		
Hemogallol (Deoxidized Hemo-			ing .....	.60	
globin by Pyrogallol)..	1.15		Ichthalbin (Ichtyol albumi-		
Hemoglobin powder.....	.50		nate)	1.20	
Hemol (Deoxidized Hemo-			Ichthargan (Silver Sulfoich-		
globin by Zinc.....	1.15		thyolate)	3.70	
Heroin see Diacetylmor-			Ichthoform (Ichthiol-For-		
phine			maldehyde)	1.25	
Hexachlorethane (Carbon			Ichthyol		
trichloride)			Indigo Madras.....	.20	
Hexachlorobenzene			Indigo-Carmine paste.....	.20	1.50
Hexahethylenamine U.S.P..	.15	1.35	Indigo-Carmine dry.....	.75	7.50
Hexamethylenamine Bro-			Indium Metal.....		
methyrate see Bromalin....			Indium Chloride.....		
Hexamethylenetetramine....			Indole cryst.....		
Hexaoxyanthraquinone see			Infusorial Earth.....		.20
Acid Rufigallic.....			Inasite (Meat Sugar).....		
Hide Powder com'l.....	.30		Inulin Kiliani.....		
Hide Powder for standardiz-			Iodine crude.....	.65	6.25
ing .....	.45	4.50	Iodine resublimed.....	.70	7.00
Homatropine Alkaloid.....			Iodine Pentoxide see (Acid)		
Homatropine Hydrobromide			jodic anhydr.....		
Homatropine Hydrochloride			Iodoform cryst. or powd....	.70	8.00
			Iodol (Tetraiodopyrrol)....	1.55	
			Iridium Metal powd.....		
			Iridium Chloride.....		

	Oz.	Lb.		Oz.	Lb.
Iridium Oxide sesqui-.....	....	....	Iron (ous) Oxide c.p. from Oxalate	\$ 0.20	\$ 1.75
Iridium Sulfate.....	....	....	Iron (ic) Peptonate (Peptonized) .....	.40	3.80
Iron Filings.....	\$ 0.15	....	Iron Perchloride see Iron (c) Chloride.....	....	....
Iron Powder.....	....	.30	Iron Persulfate see Iron (ic) Sulfate .....	....	....
Iron Powder reduced by hydrogen	\$ 0.20	2.00	Iron (ic) Phosphate ppt. C. P.....	.20	1.00
Iron Wire for standard, on spools .....	.20	....	Iron (ic) Phosphate soluble scales U.S.P.....	.20	1.25
Iron Acetate basic.....	.20	1.55	Iron (ous) Phosphate c.p....	.20	1.00
Iron (ic) Albuminate scales. ....	.30	3.25	Iron (ic) Potass. Oxalate...	.25	2.25
Iron (ic) Ammon. Chloride c.p. ....	.15	.65	Iron (ous) Potass. Sulfate c.p. ....	.15	.90
Iron (ic) Ammon. Citrate brown scales.....	.20	1.35	Iron (ic) Potass. Tartrate scales .....	.20	1.50
Iron (ic) Ammon. Citrate green scales.....	.20	1.45	Iron (ic) Pyrophosphate soluble U.S.P.....	.25	1.35
Iron (ic) Ammon. Oxalata c.p. ....	.25	1.75	Iron (ic) Quinine Citrate soluble .....	.45	4.50
Iron (ic) Ammon. Sulfate c.p. ....	.15	.65	Iron (ic) Quinine Strychnine Citrate.....	.50	5.00
Iron (ous) Ammon. Sulfate c.p. ....	.15	.25	Iron (ic) Sodium Oxalate...	.25	1.85
Iron (ous) Ammon. Sulfate c.p. large cryst.....	.20	.90	Iron (ic) Succinate.....	.75	....
Iron (ous) Ammon. Sulfate, special, 100% Cu, P, Zn, Cl free .....	.20	1.05	Iron (ic) Sulfate Basic c.p..	.10	.50
Iron (ous) Bromide.....	.50	....	Iron (ic) Sulfate cryst. C.P..	.10	.50
Iron (ic) Carbonate precip..	.10	.70	Iron (ous) Sulfate cp. alc. ppt. Phos. free.....	.15	.70
Iron (ous) Carbonate moist c.p. ....	.10	.55	Iron (ous) Sulphate C.P....	.15	.35
Iron (ous) Carbonate saccharated .....	.15	.50	Iron (ous) Sulphate tech....	....	.20
Iron (ic) Chloride cryst. C.P.	.15	.55	Iron Sulfide lumps.....	....	.20
Iron (ic) Chloride cryst. c.p. Phos. free.....	.20	1.40	Iron Sulfide gran.....	....	.20
Iron (ic) Chloride anhydr. subl. ....	.25	1.90	Iron Sulfide sticks.....	....	.20
Iron (ous) Chloride c.p. dry. ....	.15	1.00	Iron (ic) Valerianate.....	1.20	....
Iron (ous) Chloride c.p....	.15	.90	Isatin .....	....	....
Iron (ic) Chromate.....	....	....	Isinglass American best....	.20	1.60
Iron (ic) Citrate scales U. S. P.....	.20	1.20	Isinglass Japanese see Agar Agar .....	....	....
Iron (ic) Ferrocyanide insoluble .....	.25	2.50	Isobutylcarbinol see Alcohol Amylic .....	....	....
Iron (ic) Ferrocyanide soluble .....	.25	2.50	Isodulcit (Rhamnose).....	....	....
Iron (ic) Glycerophosphate. ....	.55	5.35	Isopropyltoluene see Cymene .....	....	....
Iron (ic) Hydroxide moist c.p. ....	.15	.80	Ivory Black see Charcoal, Animal .....	....	....
Iron (ic) Hypophosphite U. S. P.....	.25	2.40	Japan Wax.....	.10	.40
Iron (ous) Iodide.....	.65	6.50	Kaolin .....	....	.15
Iron (ous) Iodide saccharated .....	.45	....	Kaolin Acid washed.....	....	.35
Iron (ous) Lactate cryst....	.25	2.25	Kermes Mineral see Antimony sulfide red.....	....	....
Iron (ous) Lactate powd....	.20	2.00	Kieselguhr see Infusorial Earth .....	....	....
Iron Lactophosphate.....	.25	2.25	Kryolith .....	....	.20
Iron (ic) Nitrate cryst. c.p..	.15	.90			
Iron (ic) Oxalate cryst. c.p..	.35	280			
Iron (ous) Oxalate c.p....	.20	1.80			
Iron (ic) Oxide red ignited..	....	.80			
Iron (ic) Oxide red c.p.....	.15	.85			
Iron (ic) Oxide red saccharated soluble.....	.15	.80			

	Oz.	Lb.		Oz.	Lb.
Lacmoid scales.....	\$ 1.35	....	Lead Tannate dry.....	\$ 0.35	....
Lactophenin (Lactylpheneti- din)	1.35	....	Lead Tartrate c.p.....	.25	\$ 2.25
Lactose (Milk Sugar) powd.	\$ 0.45		Lecithin	2.50	....
Lactose (Milk Sugar) cryst. c.p. ....	.15	.85	Lenigallol (Pyrogallol Tri- acetate)	1.35	....
Lampblack .....	.20		Leucine (Aminoisocaproic Acid a.).....	....	....
Lanthanum Nitrate c.p. ....	....		Levulose Syrup (laev'ose)..	.75	....
Lanum hydrous (Wool Fat) .20	1.10		Levulose cryst.....	....	....
Lanum anhydr. (Wool Fat). .25	1.70		Levulose from Inulin.....	....	....
Lead com'l sheet.....	.25		Ligroin .....	....	.50
Lead, Shot.....	.25		Lime see Calcium Oxide....	....	....
Lead, Test Lead Ag free gran. ....	....	.50	Lime Chlorinated see Calc. Hypochlorite .....	....	....
Lead, Com'l. Mossy.....	.50		Linalool .....	....	....
Lead Metal com'l sticks.....	.35		Litharge see Lead Oxide- Mono .....	....	....
Lead Acetate cryst. techn....	.45		Lithium Metal cubes.....	....	....
Lead Acetate cryst. U.S.P....	.50		Lithium Acetate pure.....	.30	2.65
Lead Acetate powd. U.S.P....	.50		Lithium Benzoate pure U.S.P.	1.25	....
Lead Acetate gran. pure U. S. P.....	....	.50	Lithium Bichromate pure....	....	....
Lead Acetate c.p.....	.15	.50	Lithium Bitartrate pure....	.35	2.65
Lead Acetate (sub) Basic so- lut. C. P.....	.15	.40	Lithium Bromide pure U.S.P.	.85	9.00
Lead Acetate (sub) Basic c.p. dry .....	.15	.85	Lithium Carbonate pure....	.25	2.00
Lead Acetate Tribasic c.p....	.20	1.35	Lithium Chloride C.P.....	.40	3.25
Lead Arsenate c.p.....	.25	1.85	Lithium Chromate pure....	....	....
Lead Borate c.p.....	.25	....	Lithium Citrate C.P.....	.40	3.00
Lead Bromide c.p.....	.75	....	Lithium Hydroxide pure....	....	....
Lead Carbonate White Lead..	.60		Lithium Iodide pure.....	.85	....
Lead Carbonate c.p.....	.15	.60	Lithium Nitrate C.P.....	.40	3.00
Lead Chloride pure.....	.15	1.00	Lithium Phosphate pure....	....	....
Lead Chloride c.p.....	.20	1.15	Lithium Salicylate U.S.P....	.60	5.50
Lead Chromate ppt. c.p.....	.20	1.10	Lithium Sulfate C.P.....	.40	3.50
Lead Chromate c.p. fused... .20	1.10		Litmus cubes.....	.20	2.25
Lead Dioxide see Lead Oxide Brown .....	....	....	Litmus powd.....	.20	2.00
Lead Iodide .....	.50	4.75	Litmus purified.....	.65	....
Lead Nitrate pure.....	.30		Litmus Paper see Test Papers .....	....	....
Lead Nitrate cryst. c.p.....	.40		Logwood .....	....	.25
Lead Oleate.....	....	....	Logwood Extract.....	....	.25
Lead Oxalate c.p.....	.20	1.50	Lycopodium .....	.20	1.65
Lead Oxide di- Brown techn. (Peroxide) .....	....	.55	Lysol	1.00	....
Lead Oxide di- Brown c.p....	.20	.95	Magnesia see Magnesium Oxide .....	....	....
Lead Oxide Mono-Yellow (litharge) .....	....	.35	Magnesite calcined.....	....	.30
Lead Oxide Mono-Yellow c.p. ....	.15	.70	Magnesium Metal powd....	1.00	....
Lead Oxide Red (Minium). ....	.30		Magnesium Metal ribbon...	1.60	....
Lead Oxide Red c.p.....	.40		Magnesium Metal Rods....	1.20	....
Lead Peroxide see Lead Oxide-di Brown.....	....	....	Magnesium Metal Wire....	1.20	....
Lead Phosphate c.p.....	.20	1.75	Magnesium Acetate c.p.....	.15	1.25
Lead Silicofluoride .....	.35	2.90	Magnesium Ammon. Chloride c.p.....	.15	.55
Lead Subacetate see Lead Acetate Basic.....	....	....	Magnesium Ammon. Phos- phate C.P.....	.20	1.40
Lead Sulfate techn.....	.10	.50	Magnesium Ammon. Sulfate c.p. ....	.10	.50
Lead Sulfate c.p.....	.15	.75	Magnesium Borate c.p.....	.25	....
Lead Sulfide native.....	.40		Magnesium Borocitrate powd. ....	.25	....
Lead Sulfide c.p.....	.15	.70	Magnesium Bromide C.P....	.75	....
			Magnesium Carbonate powd. ....	....	.40

	Oz.	Lb.		Oz.	Lb.
Magnesium Carbonate pure..	\$ 0.15	\$ 0.60	Manganese Chloride techn..	\$ 0.15	\$ 0.60
Magnesium Carbonate c.p. cryst. ....	.20	.95	Manganese Chloride c.p. ....	.15	.80
Magnesium Carbonate c.p. Special .....	.25	1.85	Manganese Citrate c.p. ....	.40	....
Magnesium Chloride cryst. pure .....	.10	.35	Manganese Dioxide see Man- gan. Peroxide.....	....	....
Magnesium Chloride cryst. c.p. ....	.10	.45	Manganese Glycerophos- phate .....	.55	....
Magnesium Chloride cryst. c.p. special.....	.15	.90	Manganese Hypophosphite pure .....	.30	2.70
Magnesium Chloride fused lumps c.p.....	.15	.75	Manganese Iodide c.p. ....	.90	....
Magnesium Chloride fused sticks c.p.....	.15	.85	Manganese Nitrate c.p. ....	.20	1.60
Magnesium Citrate c.p. ....	.35	....	Manganese Oxide brown c.p	.20	1.10
Magnesium Glycerophos- phate pure.....	.45	....	Manganese Oxide hydrated c.p. ....	.15	.65
Magnesium Hypophosphite pure .....	.35	....	Manganese Peptonized pure	.45	4.75
Magnesium Hyposulfite pure	.45	....	Manganese Peroxide nat. gran. ....	....	.25
Magnesium Iodide pure.....	1.00	....	Manganese Peroxide nat. powd. ....	....	.25
Magnesium Lactate pure....	.35	....	Manganese Peroxide artif. techn. powd.....	....	.30
Magnesium Lactophosphate pure .....	.35	....	Manganese Peroxide artif. c.p. ....	.15	.80
Magnesium Nitrate c.p. ....	.15	.65	Manganese Peroxide artif. powder c.p.....	.20	1.25
Magnesium Oxalate c.p. ....	.25	2.25	Manganese Phosphate c.p...	.30	2.25
Magnesium Oxide light, techn. ....	.15	1.05	Manganese Sulfate c.p. ....	.15	1.10
Magnesium Oxide pure....	.20	1.50	Manganese Sulfide c.p. ....	.30	2.50
Magnesium Oxide heavy U.S.P. ....	.20	1.10	Manganese Tartrate c.p. ....	.40	3.75
Magnesium Oxide c.p. ....	.25	1.85	Mannit .....	.45	4.85
Magnesium Oxide c.p. special	.45	3.00	Mannose .....	....	....
Magnesium Oxide and Sod. carbonate c.p.....	.20	1.75	Marble Chips.....	....	.10
Magnesium Perborate.....	.45	3.75	Meconin .....	....	....
Magnesium Peroxide.....	.30	3.00	Melampyrit see Dulcit.....	....	....
Magnesium Phosphate pri- mary c.p.....	.30	2.75	Menthyl cryst.....	.75	....
Magnesium Phosphate sec- ondary c.p.....	.15	.90	Mercury Metal.....	.20	1.70
Magnesium Phosphate ter- tiary c.p.....	.20	1.25	Mercury Metal redistilled...	.20	1.90
Magnesium Salicylate pure..	.35	3.75	Mercury (ic) Acetate c.p....	.35	3.25
Magnesium Silicate c.....	.30	3.00	Mercury (ous) Acetate pure.	.80	....
Magnesium Sulfate cryst. (Epsom salt).....	....	.20	Mercury Ammoniated Chloride .....	....	2.75
Magnesium Sulfate cryst. (Epsom salt) c.p.....	....	.30	Mercury (ic) Arsenate pure.	.90	....
Magnesium Sulfate anhydr. c.p. ....	.15	.70	Mercury (ous) Arsenite pure	.90	....
Magnesium Sulfite pure....	.15	.75	Mercury (ic) Biniodide red c.p. ....	.90	....
Magnesium Tartrate c.p. ....	.30	2.25	Mercury (ic) Bisulfate c.p...	.25	2.00
Maltose (Malt Sugar) c.p... ..	....	....	Mercury (ic) Bromide c.p... ..	.90	....
Manganese Metal cryst.....	....	....	Mercury (ic) Chloride (Bi) cryst. ....	.25	2.40
Manganese Metal pure.....	.40	....	Mercury (ic) Chloride (Bi) powd. ....	.30	2.60
Manganese Acetate c.p. ....	.20	1.35	Mercury (ic) Chloride (Bi) c.p. ....	.30	2.60
Manganese Ammon. Sulfate c.p. ....	....	....	Mercury (ous) Chloride c.p... ..	.30	2.75
Manganese Borate c.p. ....	.15	.90	Mercury (ic) Chromate c.p... ..	.90	....
Manganese Bromide c.p. ....	.80	....	Mercury (ic) Cyanide c.p... ..	.90	....
Manganese Carbonate c.p... ..	.15	.90	Mercury (ic) Iodide red....	.90	....
			Mercury (ous) Iodide c.p... ..	.90	....
			Mercury (ic) Nitrate c.p... ..	.40	3.95
			Mercury (ous) Nitrate c.p... ..	.45	4.30
			Mercury Oleate 25% U.S.P..	.50	....
			Mercury (ic) Oxide Red c.p.	.35	3.60

	Oz.	Lb.		Oz.	Lb.
Mercury (ic) Oxide Red powder	\$ 0.30	\$ 2.80	Methylpropylphenyl Hexahydride see Menthol.....		
Mercury (ic) Oxide Yellow c.p. ....	.40	4.00	Methylprotocatechuic Aldehyde see Vanillin.....		
Mercury (ous) Oxide Black c.p. ....	.45	4.25	Methyltheobromine see Caffeine		
Mercury (ic) Oxycyanide... ..	.60	....	Methylthionine Hydrochloride (Methylene Blue Medic)	\$ 0.95	....
Mercury (ic) Phosphate pure .....	....	....	(Metol) Velatol substitute..	1.50	....
Mercury (ous) Phosphate pure .....	....	....	Michler's Keton (Tetramethyldiamino Benzophenone) .....		....
Mercury Protoiodide see Mercury (ous) iodide.....	....	....	Microcosmic Salt see Sodium Ammon. Phosphate.....		....
Mercury Salicylate.....	.40	....	Milk Sugar see Lactose.....		....
Mercury Subsulfate yellow..	.40	....	Milk Sulfur see Sulfur praecipit .....		....
Mercury (ic) Succinate.....	.90	....	Mineral Blue see Iron Ferrocyanide .....		....
Mercury (ic) Succinimide... ..	1.20	....	Mineral Carbon see Graphite .....		....
Mercury (ic) Sulfate c.p....	.45	4.25	Mineral Green see Copper Carbonate .....		....
Mercury (ous) Sulfate c.p....	.40	3.75	Mineral Pitch see Asphaltum .....		....
Mercury (ic) Sulfide c.p....	.45	4.25	Mineral Wax see Ceresin... ..		....
Mercury (ic) Sulfide Red Cinnabar c.p.....	.40	3.75	Mineral Wool.....	\$ 0.25	....
Mercury (ic) Sulfide Red powd. (Cinnabar).....	.35	3.50	Minium see Lead Oxide red. ....		....
Mercury (ic) Sulfocyanate c.p. ....	.45	4.25	Mixture, Eschka's.....	.20	1.75
Mercury (ous) Tannate pure ..	.30	....	Mohr's Salt see Iron (ous) Ammon. sulfate.....		....
Mercury with Chalk U.S.P. ....	....	1.40	Molybdaenum Metal.....		....
Mesothorium .....	....	....	Molybdaenum Oxide.....		....
Metadioxybenzene see Resorcin .....	....	....	Molybdaenum Trioxide see (Acid) Molybdic anhydr..		....
Metals Fusible see Alloys... ..	....	....	Monoamidodiphenylamine Hydrochloride see Diphenylhydrazine HCl.....		....
Methanamid see Formamide .....	....	....	Monobromethan see Ethyl Bromide .....		....
Methenyl Tribromide see Bromoform .....	....	....	Monobromo-Naphthalene ..	1.75	....
Methyl Acetate c.p.....	.70	....	Monochloracetone see Chloracetone .....		....
Methyl Alcohol see Alcohol Methylic .....	....	....	Monochlorethane see Ethyl Chloride .....		....
Methyl Hydroxide see Alcohol Methylic.....	....	....	Monoiodoethane see Ethyl Iodide .....		....
Methyl Iodide c.p.....	1.65	....	Monomethylcatechol see Guaiacol .....		....
Methyl Orange (indicator)..	1.80	....	Monse's Salt see Iron (ic) Sulfate Basic.....		....
Methyl Red (indicator)....	1.30	....	Morphine Alkaloid.....		....
Methyl Salicylate (Synthetic Oil Wintergreen).....	.40	....	Morphine Acetate.....	10.50	....
Methyl Sulfate (Dimethyl sulfate) c.p.....	.70	....	Morphine Bimeconate see Morphine Meconate.....		....
Methylacetyl see Acetone... ..	....	....	Morphine Diacetyl pure see Diacethylmorphine .....		....
Methylal pure (Formal)....	....	....	Morphine Hydrobromide....	9.00	....
Methylamine Solut. 33%....	....	....	Morphine Hydrochloride (Muriate)	11.50	....
Methylamine Hydrochloride .....	....	....	Morphine Meconate (Bimeconate) .....		....
Methylbenzene see Toluene. ....	....	....	Morphine Sulfate.....	8.00	....
Methylbenzoylecgonine see Cocaine .....	....	....	Morrhuol see Gaduol.....		....
Methylenedimethylate see Methylal .....	....	....	Mucilage .....		.75
Methylenetramine Hexa see Formin .....	....	....	
Methylmorphine see Codeine .....	....	....	
Methylpara-amido-metacresol Sulfate or Hydrochloride see Metol.....	....	....	
Methylpropylphenol Normal see Thymol.....	....	....	

	Oz.	Lb.		Oz.	Lb.
Naphtha, Coal Tar see Benzol			Nitron		
Naphtha, Petroleum see Benzin			Nitronaphthalene	\$ 0.20	\$ 1.70
Naptha, Wood see Alcohol			Nitrophenol Para		
Methylic			Nitrosodimethylaniline Para		
Naphthalene white pure		\$ 0.55	Nitrotoluene Ortho		
Naphthalene Alcohol purif.			Nitrotoluene Para		
c.p.	\$ 0.20	1.20	Novargan (10% Silver		
Naphthol Alpha	.70		Albumonate)	1.70	
Naphthol Beta	.40	3.75	Nutgall U.S.P.		.55
Naphthol Beta Benzoate	.95		Nutgall U.S.P. powder		.70
Naphthol Beta Nitroso	2.25				
Naphthylamine Alpha	.90				
Naphthylamine Alpha					
Hydrochloride	.90		Oil Almond Bitter true	1.35	
Naphthylamine Beta	.85		Oil Almond Bitter artific.		
Narceine	15.00		(Benzaldehyde)	.75	8.00
Narcophin powder	11.00		Oil Aniline see Aniline pure		
Narcotine			Oil Anise double rectif.	.60	
Neurodin (Acetylparaoxy-			Oil Ants artif. see Furfurol		
phenylurethane)	5.00		Oil Apple see Amyl Valerate		
Nickel Metal cubes	.20	1.50	Oil Bergamot rectif.	.90	
Nickel Metal pure sheet		2.50	Oil Cade U.S.P.		.90
Nickel Metal wire	.30	2.50	Oil Cajeput rectif.	.25	1.85
Nickel Metal powder		2.40	Oil Castor		.30
Nickel Acetate c.p.	.20	1.90	Oil Cedar Wood	.15	1.10
Nickel Ammon. Chloride			Oil Cedar Wood for		
Nickel Ammon. Sulfate			immersion	.45	
techn.		.30	Oil Cedar Wood Zeiss		
Nickel Ammon. Sulfate c.p.	.15	.75	Oil Cloves rectif.	.30	2.70
Nickel Bromide c.p.	.70		Oil Cotton Seed		.30
Nickel Carbonate c.p.	.30	2.75	Oil Fennel Ia	.40	3.90
Nickel Chloride c.p.	.20	1.75	Oil Fusel see Alcohol Amylic		
Nickel Chloride c.p. (Co			Oil Lavender Ia	.50	5.25
free)	.55		Oil Lemon Ia	.40	3.00
Nickel Chloride anhydr. c.p.	.30	2.30	Oil Linseed raw		.30
Nickel Cyanide pure			Oil Linseed boiled		.35
Nickel Hydroxide c.p.	.30	2.65	Oil Mirbane see Nitrobenzol		
Nickel Nitrate cryst. c.p.	.20	1.20	Oil Mustard artif. (Allyl		
Nickel Nitrate Co free c.p.	.55		Sulfocyanide)	2.00	
Nickel Oxalate c.p.	.30	3.00	Oil Mustard true dist.	2.25	
Nickel (ic) Oxide black	.20	1.75	Oil Olive		.55
Nickel (ic) Oxide black c.p.	.35	3.30	Oil Origanum Cretan Ia	.40	4.00
Nickel (ous) Oxide green c.p.	.25	2.00	Oil Paraffin Yellow		.30
Nickel Phosphate c.p.	.25	2.00	Oil Paraffin White		.40
Nickel Sulfate cryst. techn.	.15	.45	Oil Peppermint rect.	.40	3.25
Nickel Sulfate cryst. c.p.	.25	2.00	Oil Petroleum crude		.15
Nickel Sulfate cryst. Co free			Oil Phenylmustard		
c.p.	.55		(Thiocarbamil)	2.50	
Nickel Sulfide c.p.	.30	3.00	Oil Rape Seed		.35
Nicotine Alkaloid c.p.			Oil Turkey Red		.35
Nitre see Potass. Nitrate			Oil Turpentine		.50
Nitraniline Meta			Oil Turpentine double rectif.		.60
Nitraniline Para			Oil Wine true heavy	.65	
Nitrobenzol rectif. (Oil			Oil Wine true light	.40	
Mirbane)	.20	1.30	Oil Wintergreen (Sweet		
Nitrobenzylchloride Ortho			Birch)	.55	
Nitrobenzylchloride Para			Oil Wintergreen Synthetic		
Nitroglycerine Solut. 1%	.25	1.80	(Methyl Salicylate)	.30	
Nitroglycerine Solut. 15%	1.50		Omegachlorotoulene see		
			Benzyl Chlorid.		
			Opium Smyrna natur. U.S.P.		17.50
			Opium Smyrna gran. U.S.P.		17.50
			Opium Smyrna powd. U. S.P.		17.50

	Oz.	Lb.		Oz.	Lb.
Orcin			Paraformaldehyde (Trioxymethylene)	\$ 0.20	\$ 1.20
Orexine (Phenyldihydro- quinazoline Tannate).....	\$ 2.50		Paraldehyde U.S.P.....	.40	3.50
Orlean (Anatto).....	.20	\$ 0.95	Paramethoxypropenylben- zene see Anethol.....		
Orphol see Betanaphthol			Paramethylphenol see Cresol, Para		
Bismuth			Paramethylpropylbenzene see Cymene.....		
Orpiment see Arsenic Sul- fide yellow.....			Paramidodimethylaniline Hydrochloride see Dime- thylpara-phenylenediamine HCl		
Orthodioxycbenzene see			Paranaphthalene see Anthra- cene		
Pyrocatechin			Paraoxytoluene see Cresol, Para-		
Orthomethylphenol see			Paraphtalein see		
Cresol Ortho.....			Phenolphthalein		
Ortho-Oxytoluene see Cresol			Parapropylmetacresol see		
Ortho-			Thymol		
Ortol (Methylortho- amidophenol)	1.20		Parchment Paper.....		.35
Osmium Metal powd.....			Paris Green see Copper		
Osmium Tetroxide see			Acetoarsenite		
(Acid) Osmic Anhydride..			Pear Oil see Amyl Acetate..		
Ox-Gall inspiss.....	.20	1.80	Pearl Ash see Potass. car- bonate crude.....		
Ox-Gall inspiss dry powd. (Kip's)		4.00	Pearl White see Bismuth		
Oxone Cubes (Sod. peroxide fused for generating O)...		.75	Oxychloride		
Oxone Cartridges (Sod. peroxide fused for generat- ing O).....			Pectin Sugar see Arabinose.		
Oxydimethylquinizine see			Pelletierie Tannate.....		
Antipyrine			Pentane (Amyl Hydride) from Petroleum.....		
Oxyethylacetanilide see			Pepsin Ph. G. powd.....	.35	3.25
Acetphenetidin			Pepsin U.S.P. powd. or scales .....	.40	3.75
Oxymethylene see			Pepton dry from Albumen..	.80	
Formaldehyde			Pepton dry for Bact. work..	.50	4.50
Ozokerite see Ceresin Black			Perchlorethylene see Carbon Dichloride		
			Perchloromethane see Car- bon Tetrachloride.....		
Palladium Metal sheet and wire			Perhydrol see Hydrogen Peroxide 30%.....		
Palladium Praecipit. (Palladium Black).....			Petroleum Crude.....		.10
Palladium Chloride dry.....			Petroleum Ether see Ether		
Palladium Nitrate dry.....			Petrolic		
Pancreatin pure.....	.35		Petrolatum yellow.....		.18
Pankreon (Tannin Pan- creatin comp.) powder....			Petrolatum white.....		.30
Papain (Papayotin).....	.70		Phenacetin see Acet- phenetidin		
Papers-Test see Test Papers			Phenacetolin indicator.....	1.25	
Para-Amidoacetanilid see			Phenanthrene		
Acetphenylenediamine			Phenazone see Antipyrine...		
Para-			Phenol see Acid Carbolic...		
Para-Amidophenol see			Phenolphthalein (indic.)....	2.30	
Amidophenol Para.....			Phenolphthalin		
Para-Aminotoluene see			Phenyl Hydride see Benzol.		
Toluidine Para.....			Phenyl Hydroxide see Acid Carbolic		
Paradiaminodiphenyl see			Phenyl Urethane see		
Benzidine			Euphorin		
Paradioxybenzene see			Phenylacetamide see		
Hydroquinone			Acetanilide		
Paraffin Solid soft 43° M.P..		.35			
Paraffin Solid medium 54° M.P. ....		.35			
Paraffin Solid hard 58° M.P.		.35			
Paraffin Liquid see Oil					
Paraffin					
Paraform (Trioxymethylene)	.25	1.40			

	Oz.	Lb.		Oz.	Lb.
Phenylanime see Aniline.....			Platinum (ic) Chloride c.p., dry		
Phenylaniline see Diphenylamine			Platinum (ic) Chloride Solut. 5%		
Phenylenediamine Meta.....			Platinum (ic) Chloride Solut. 10%		
Phenylenediamine Para.....			Platinum (ic) Ammon. Chloride		
Phenylenediamine Meta Hydrochloride			Platinum (ic) Barium Cyanide		
Phenylethyl Carbamate see Euphorin			Platinum (ous) Barium Cyanide		
Phenylhydrazine pure.....	\$ 0.75	\$ 6.50	Platinum (ous) Magnes. Cyanide		
Phenylhydrazine Acetate.....			Platinum (ic) Potass. Chloride		
Phenylhydrazine Hydrochloride .....	.75		Platinum (ous) Potass. Chloride		
Phenylmethane see Toluene.			Platinum (ous) Potass. Cyanide		
Phenylmustard Oil see Oil Phenylmustard			Platinum (ous) Sodium Chloride		
Phloridzin			Podophyllin powd. U.S.P....	\$ 0.40	\$ 4.50
Phloroglucin (Phloroglucinol)	9.00		Potash Lye see Potassium Hydroxide Com'l.....		
Phosphoric Anhydride see Acid Phosphoric anhydride			Potassium Metal.....	3.50	
Phosphorus Yellow sticks... .	.25	1.30	Potassium and Sodium Alloy		
Phosphorus Yellow sticks thin $\frac{1}{8}$ in.....	.35	2.25	Potassium Acetate U.S.P....	.25	2.25
Phosphorus Red amorph....	.35	2.75	Potassium Acetate c.p.....	.30	2.50
Phosphorus Oxychloride....	.35	2.00	Potassium Alum see Aluminum Potass. Sulfate.....		
Phosphorus Pentachloride..	.25	1.85	Potassium Ammon. Sulfate c.p. ....	.15	.90
Phosphorus Pentoxide see Acid Phosphoric anhydride			Potassium Antimoniate c.p..	.25	2.10
Phosphorus Pentasulfide....	.60		Potassium Antimoniate Pyro-c.p. ....	.35	3.10
Phosphorus Trichloride....	.25	1.75	Potassium Antimony Sulfide (Liver Antimony).....	.20	1.10
Photol	4.50		Potassium Arsenate c.p....	.25	2.25
Phtalin—see Phenolphthalin..			Potassium Arsenite c.p.....	.25	2.25
Physostigmine and salts see Eserine			Potassium Benzoate.....	.70	
Picrotoxin			Potassium Bicarbonate cryst. U.S.P.		2.35
Pilocarpine Alkaloid.....			Potassium Bicarbonate cryst. c.p. ....	.30	3.00
Pilocarpine Hydrobromide..			Potassium Bichromate cryst. techn.		1.10
Pilocarpine Hydrochloride..			Potassium Bichromate powd. tchn.		1.30
Pilocarpine Nitrate.....			Potassium Bichromate c.p..	.20	1.30
Pilocarpine Salicylate.....			Potassium Bichromate fused c.p. ....	.20	1.55
Pilocarpine Sulfate.....			Potassium Biniodate.....		
Pipe Clay.....		.10	Potassium Binoxalate cryst..		2.00
Piperazine (Diethylenediamine)			Potassium Binoxalate c.p....	.25	2.30
Piperidine			Potassium Biphosphate (primary) .....	.30	3.00
Piperine Alkaloid cryst....	1.25		Potassium Bisulfate cryst. c.p. ....	.20	1.35
Piperonal (Heliotropin)....			Potassium Bisulfate fused c.p. ....	.20	1.60
Piperonyl Aldehyde (Heliotropin)			Potassium Bisulfite techn. cryst. ....	.20	1.40
Pitch Black.....		.15	Potassium Bisulfite c.p.....	.25	2.10
Pitch Burgundy.....		.20			
Pitch Green.....		.20			
Pith					
Plaster Paris see Calcium sulfate calcined.....					
Platinum foil or wire.....					
Platinum Abestos 5%.....					
Platinum Black (Platin. Mohr)					
Platinum Scrap.....					
Platinum Sponge.....					

	Oz.	Lb.		Oz.	Lb.
Potassium Bisulfite Meta- (Pyrosulfite) c.p.....	\$ 0.25	\$ 2.10	Potassium Glycerophosphate.	\$ 0.35	\$ 3.75
Potassium Bitartrate crude (Argols) powd.....	.15	.95	Potassium Guaiacolsulfonate (Thiocol)	2.00	....
Potassium Bitartrate powd. c.p. ....	.20	1.50	Potassium Hydroxide techn. lump. (Lye).....	....	.50
Potassium Bitartrate powd. (Cream Tartar) U.S.P....	.20	.90	Potassium Hydroxide techn. gran. ....	....	2.35
Potassium Bitartrate c.p....	.25	1.40	Potassium Hydroxide Elec- trolytic .....	.35	3.20
Potassium Borate c.p.....	.20	2.00	Potassium Hydroxide c.p. by alc. ....	.40	4.50
Potassium Bromate c.p....	.35	2.25	Potassium Hydroxide with Lime sticks.....	.50	5.00
Potassium Bromide cryst. or gran. U.S.P.....	.30	2.60	Potassium Hypophosphite U. S. P. ....	.25	2.50
Potassium Bromide cryst. c.p.	.30	2.75	Potassium Hyposulfite pure. ....	....	....
Potassium Carbonate crude (Pearl ash).....	....	1.25	Potassium Iodate c.p.....	.90	....
Potassium Carbonate purif. (Salt tartar).....	....	2.50	Potassium Iodide cryst. or gran. U.S.P.....	.60	5.75
Potassium Carbonate cryst. c.p. ....	.30	2.60	Potassium Iodide cryst. c.p..	.65	6.00
Potassium Carbonate anhyd. c.p. ....	.30	2.85	Potassium Manganate.....	.40	4.25
Potassium Carbonate dry powd. c.p.....	.35	2.95	Potassium Metabisulfite pure	.20	1.75
Potassium Chlorate cryst. techn. ....	....	1.50	Potassium Molybdate c.p....	.95	....
Potassium Chlorate gran. techn. ....	....	1.50	Potassium Nitrate cryst.....	....	.95
Potassium Chlorate powd. techn. ....	....	1.60	Potassium Nitrate powder... ..	....	1.05
Potassium Chlorate small cryst c.p.....	.20	1.60	Potassium Nitrate cryst. c.p.	.20	1.20
Potassium Chlorate large cryst. c.p.....	.20	1.65	Potassium Nitrate powd. c.p.	.20	1.30
Potassium Chlorate powd. c.p. ....	.20	1.80	Potassium Nitrate fused, sticks cp.....	.30	2.15
Potassium Chloride techn....	....	.75	Potassium Nitrite cryst.....	.30	2.60
Potassium Chloride pure white .....	.15	.85	Potassium Nitrite cryst. c.p..	.30	2.80
Potassium Chloride c.p.....	.15	1.60	Potassium Nitrite sticks c.p..	.35	3.00
Potassium Chromate pure... ..	....	1.70	Potassium Nitroprusside....	2.50	....
Potassium Chromate c.p....	.25	1.85	Potassium Oxalate pure.....	.25	2.25
Potassium Chromate powd. c.p. ....	.25	1.95	Potassium Oxalate c.p.....	.25	2.50
Potassium Citrate U.S.P....	.25	2.50	Potassium Oxalate anhydr. c.p. ....	.30	3.00
Potassium Citrate c.p.....	.30	3.00	Potassium Oxalate acid see Pot. Binoxalate.....	....	....
Potassium Cyanate c.p.....	....	....	Potassium Percarbonate c.p..	....	....
Potassium Cyanide 98-100% lump .....	.15	1.00	Potassium Perchlorate c.p... ..	.35	3.90
Potassium Cyanide 98-100% gran. ....	.15	.95	Potassium Permanganate cryst. pure.....	.40	3.60
Potassium Cyanide c.p.....	....	5.00	Potassium Permanganate cryst. c.p.....	.45	4.75
Potassium Ferricyanide cryst.	.35	3.50	Potassium Permanganate spec. cryst.....	.50	5.25
Potassium Ferricyanide cryst. c.p. ....	.40	3.75	Potassium Persulfate.....	.40	4.25
Potassium Ferrocyanide cryst.	.20	1.90	Potassium Phosphate second- ary c.p.....	.30	2.85
Potassium Ferrocyanide an- hydr. ....	.30	2.75	Potassium Phosphate pri- mary c.p.....	.30	2.80
Potassium Ferrocyanide cryst. c.p. ....	.30	2.50	Potassium Phosphate terti- ary c.p.....	.35	3.25
Potassium Fluoride cryst. c.p.	.35	3.25	Potassium Pyrophosphate pure .....	.25	2.70
Potassium Fluoride fused c.p.	.35	3.25	Potassium Pyrophosphate c.p. ....	.25	2.85
Potassium Formate c.p.....	.35	3.00	Potassium Platinum Salts see Platinum .....	....	....
			Potassium Pyrosulfate see Pot. bisulfate fused.....	....	....

	Oz.	Lb.		Oz.	Lb.
Potassium Pyrosulfite pure see Pot. metabisulfite.....			Pyrogallol see Acid Pyrogal- lic		
Potassium Salicylate pure...\$	0.40	\$ 4.25	Pyrogallol Monoacetate see Eugallol		
Potassium Silicate tech. dry.	.20	2.00	Pyrogallol Triacetate see Lenigallol		
Potassium Silicate techn. solut. 30-33° Be (Potash Waterglass)		2.10	Pyrolusite see Mangan. Per- oxide nat.....		
Potassium Silicate pure cryst.	.25	2.25	Pyromucic Aldehyde see Furfurol		
Potassium Silicate solut. c.p.	.35	3.50	Pyrrol		
Potassium Silicofluoride c.p.	.35	3.25	Pyrrol Tetriodide see Iidol		
Potassium Sulfate pure cryst.	.15	.90			
Potassium Sulfate cryst. c.p.	.20	1.00			
Potassium Sulfate powder c.p. ....	.20	1.10	Quercit (Acorn Sugar).....		
Potassium Sulfate Acid see Pot. Bisulfate.....			Quinidine Alkaloid cryst...\$	1.75	
Potassium Sulfide fused pure		2.25	Quinidine Alkaloid Precip...	1.75	
Potassium Sulfide cryst. c.p.	.30	2.50	Quinidine Sulfate.....	1.25	
Potassium Sulfit c.p.....	.35	2.75	Quinine Alkaloid pure.....	1.75	
Potassium Sulfocarbonate....	.40		Quinine Acetate.....	1.75	
Potassium Sulfocarbonate....			Quinine Arsenate.....	1.50	
Potassium Sulfocyanate pure			Quinine Arsenite.....	1.50	
Potassium Sulfocyanate c.p.			Quinine Bisulfate.....	1.10	
Potassium Tartrate powd. pure .....	.25	1.75	Quinine Carbonic Ether see Euquinine		
Potassium Tartrate cryst. c.p.	.30	2.60	Quinine Citrate.....	1.50	
Potassium Tetroxalate c.p...	.30	2.60	Quinine Dihydrochloride....	1.60	
Potassium Thiocyanate see Pot. Sulfocyanate.....			Quinine Ethyl Carbonate see Euquinine		
Potassium Zinc Sulfate c.p...	.20	1.70	Quinine Ferrocyanide.....	1.60	
Propionic Glyocoll see Ala- nin a.....			Quinine Glycerophosphate..	2.25	
Propionitrile (Ethyl Cyan- ide)			Quinine Hydriodide.....	1.75	
Propional (Dipropylmalony- lurea)	6.50		Quinine Hydrobromide....	1.50	
Propyl Carbinol see Alcohol Butylic			Quinine Hydrochloride....	1.50	
Propylamine see Trimethyla- mine			Quinine Hypophosphite....	1.60	
Protocatechin Methyl Ester see Guaiacol.....			Quinine Lactate.....	1.60	
Protocatechuicaldehyde Methylene Ester see Pip- eronal			Quinine Phosphate.....	1.50	
Prussian Blue see Iron Fer- rocyanide			Quinine Salicylate.....	1.50	
Pumice lump.....		.15	Quinine Sulfate.....	1.50	
Pumice powd.....		.15	Quinine Tartrate.....	1.50	
Pyoktanin Blue.....	3.20		Quinine Valerianate.....	1.60	
Pyoktanin Yellow.....	3.20		Quinine and Urea Hydro- chloride	1.85	
Pyrazine Hexahydride see Piperazine			Quinoidine .....	.15	\$ 1.00
Pyridine pure.....	.35	3.50	Quinol see Hydroquinone...		
Pyridine c.p.....	.45	5.00	Quinoline pure.....	.70	
Pyroacetic Ether see Acetone			Quinoline Tartrate.....	.70	
Pyrocatechin resubl. (Ortho- dioxymethylene)	1.00		Quinone (Benzoquinone)...		
Pyrocatechinmonoethyl Es- ter see Guaethol.....			Radium, pure element.....		
Pyrocatechinmonomethyl Es- ter see Guaiacol.....			Radium, salts in all activities		
			Realgar see Arsenic Sulfide		
			Red		
			Red Lead see Lead Oxide...		
			Red Precipitate see Mer- cury (ic) Oxide.....		
			Renaden	1.75	
			Resorcin recryst. white (Re- sorcinol)	2.75	
			Resorcin resubl.....	3.50	
			Resorcinol Monoacetate see Euresol		

	Oz.	Lb.		Oz.	Lb.
Resorcinolphthalein see Fluorescein			Sand, Silica, powdered.....		\$ 0.10
Resorcinolphthalin see Fluorescein			Santonin cryst.....	\$ 4.25	
Retinol	\$ 0.90		Santyl (Santalol Salicylic Acid Ester).....	1.55	
Rhamnose see Isodulcit.....			Saponin crude.....	.45	4.75
Ricin			Sarcosin (Methylaminoacetic Acid)		
Rochelle Salt see Sod. and Potass. Tartrate.....			Schlippe's Salt (Sod. Sulfatimoniate) see Salt.....		
Rock Salt.....		\$ 0.10	Scopolamine Hydrobromide.....		
Rodinal see Amido Phenol para			Sealing Wax.....		.45
Rosaniline see Aniline Dyes, Red			Sealing Wax, best, sticks....		.75
Rosin Yellow (Colophony).....		.12	Seignette Salt see Sod. Pot. Tartrate		
Rosin Yellow powder.....		.25	Selenium powd.....	.90	
Rosin white.....		.20	Selenium sticks.....		
Rouge Jewelers.....	.15	.60	Selenium (ic) Hydroxide (Acid Selenic).....		
Rubidium Metal.....			Selenium (ous) Hydroxide cryst. (Acid Selenious)....		
Rubidium Alum.....			Selenium (ous) Hydroxide subl. (Acid Selenious).....		
Rubidium Bromide.....			Sennax .....	.85	
Rubidium Chloride.....			Shellac Orange flake.....		.85
Rubidium Iodide.....			Shellac Orange powd.....		.80
Rubidium Sulfate.....			Shellac White.....		.95
Rufigallol see Acid Rufigallic			Siderite .....		.30
Ruthenium powder.....			Silica powd. see Sand.....		
Ruthenium Chloride.....			Silicon amorph.....		
Ruthenium Oxychloride.....			Silicon cryst.....		
			Silicon Carbide cryst. (Carborundum)		
Saccharin	2.25		Silicon Carbide powd. (Carborundum)		
Saccharose c.p.....	.20	1.35	Silver Metal, gran.....	1.20	
Safrol			Silver Metal, foil and wire...	1.20	
Salicin U.S.P.....	1.00		Silver Metal, ppt. powd.....	1.75	
Salicylic Aldehyde (Acid Salicylous)			Silver Metal, leaf.....		
Saliformin (Formin Salicylate)	1.40		Silver Acetate c.p.....	1.70	
Salinaphthol see Betol.....			Silver Arsenite c.p.....	1.50	
Salipyrine (Antipyrine Salicylate)	1.00		Silver Bromide c.p.....	1.35	
Salit (Salicylic Acid Ester of Borneol) .....	.40	4.20	Silver Carbonate c.p.....	1.30	
Salol (Phenyl Salicylate)...	.50	5.00	Silver Chloride pure.....	1.00	
Saloquinine (Quinone Salicylic Ester).....	1.75		Silver Chromate pure.....	1.50	
Salt Best.....		.10	Silver Citrate pure.....	1.50	
Salt Schlippe's (Sod. Sulfatimoniate) .....	.20	2.25	Silver Cyanide pure.....	1.50	
Salt Sea.....		.05	Silver Ichthyol see Ichthar-gan		
Salt Soldering.....		1.00	Silver Iodide pure.....	1.50	
Salt Sorrel see Pot. Binoxalate			Silver Lactate.....	1.50	
Salt Tartar see Pot. Carbonate			Silver Nitrate cryst. c.p....	.75	10.50
Saltcake see Sod. Bisulfate techn.			Silver Nitrate powd. c.p....	.85	
Saltpetre see Pot. Nitrate....			Silver Nitrate sticks.....	1.00	
Sand, Quarz, washed and ignited .....		.25	Silver Nitrite c.p.....	1.80	
Sand, Sea.....		.10	Silver Oxide pure.....	1.30	
Sand, Sea washed and ignited .....		.25	Silver Phosphate pure.....	2.00	
			Silver Sulfate c.p.....	1.35	
			Silver Sulfide pure.....	2.00	
			Slag Wool see Mineral Wool		
			Soap Castile white bars....		.25
			Soap Castile white powd....		.60

	Oz.	Lb.		Oz.	Lb.
Soap Soft (Green Soap) U. S. P.....		\$ 0.30	Sodium Borate fused ground (Borax Glass).....		\$ 0.40
Soda Ash see Sodium Carbonate .....		....	Sodium Borobenzoate.....	\$ 0.35	3.00
Soda Lime see Calc. Hydrate .....		....	Sodium Bromate c.p.....	.60	5.75
Soda Lye see Sodium Hydroxide .....		....	Sodium Bromide pure.....	.25	2.00
Sodium Metal.....	\$ 0.25	1.50	Sodium Bromide c.p.....	.25	2.20
Sodium Acetate cryst.....	.10	.40	Sodium Calcium Hydrate, dry for N. Det.....	.15	.50
Sodium Acetate cryst. c.p..	.12	.60	Sodium Calcium Hydrate 15% H ₂ O for CO ₂ Det....	.15	.65
Sodium Acetate anhydr. c.p.	.15	1.00	Sodium Carbonate cryst. techn. (Sal Soda).....		.10
Sodium Acetate fused c.p..	.15	.90	Sodium Carbonate calcined (Soda Ash).....		.15
Sodium Alum see Aluminum Sulfate.....		....	Sodium Carbonate calcined dry purif.....		.30
Sodium Aluminate c.p.....	.25	1.75	Sodium Carbonate anhydr. c.p. ....	.10	.40
Sodium Amalgam 5%, 10% or 15%.....	.60	....	Sodium Carbonate anhydr. c.p. special.....	.15	.90
Sodium Amalgam 2%.....	.25	1.85	Sodium Carbonate cryst. c.p.	.10	.30
Sodium Amidobetaphenanthroline monosulfonate see Eikonogen .....		....	Sodium Carbonate monohydrated U.S.P.....		.30
Sodium Ammon. Phosphate pure .....	.12	.65	Sodium Chlorate cryst.....	.10	.90
Sodium Ammon. Phosphate c.p. ....	.15	.75	Sodium Chlorate cryst. c.p..	.15	1.10
Sodium Arsenate techn. lumps .....		.35	Sodium Chloride techn.....		.10
Sodium Arsenate c.p.....	.15	.80	Sodium Chloride cryst c.p..	.10	.25
Sodium Arsenate anhydr. c.p.	.20	1.10	Sodium Chloride cryst. c.p. special .....	.15	.60
Sodium Arsenite techn.....	.15	.50	Sodium Chloride fused c.p..	.12	.50
Sodium Arsenite c.p.....	.15	.90	Sodium Choleate.....	.45	....
Sodium Benzoate.....		....	Sodium Chromate acid see Sod. Bichromate.....		....
Sodium Bicarbonate powd..		.10	Sodium Chromate c.p.....	.20	1.50
Sodium Bicarbonate cryst. pure .....		.30	Sodium Cinnamate.....	.50	....
Sodium Bicarbonate powd. c.p. ....	.10	.35	Sodium Citrate pure.....	.15	1.10
Sodium Bichromate powd. techn. ....		.75	Sodium Citrate c.p.....	.20	1.60
Sodium Bichromate dry powd. c.p.....	.20	1.75	Sodium Cobaltic Nitrite c.p.	.70	....
Sodium Bichromate cryst. c.p. ....	.15	1.60	Sodium Cyanide.....	.15	1.00
Sodium Binodate c.p.....	.20	1.35	Sodium Dimethylarsenate see Sod. cacodylate.....		....
Sodium Bismuthate c.p.....	1.00	10.50	Sodium Dioxide see Sod. peroxide .....		....
Sodium Bisulfate techn. powd. (Saltcake).....		.15	Sodium Ethylate dry.....	.90	....
Sodium Bisulfate cryst. c.p..	.10	.30	Sodium Ethylate liquid.....	.35	....
Sodium Bisulfate powd. c.p.	.15	.65	Sodium Ferrocyanide c.p..	.30	2.50
Sodium Bisulfate fused c.p..	.15	.60	Sodium Fluoride techn. powd. ....		.60
Sodium Bisulfide c.p.....	.15	.45	Sodium Fluoride c.p.....	.15	.85
Sodium Bisulfide techn. dry. ....		.35	Sodium Formate c.p.....	.20	1.85
Sodium Bisulfide c.p.....	.15	.80	Sodium Glycerophosphate 75% .....	.20	3.00
Sodium Bisulfide sol. c.p....		.30	Sodium Glycocholate.....	.90	....
Sodium Bitartrate cryst. c.p.	.20	1.60	Sodium Hydrosulfide (Sod. Sulfhydrate) .....		....
Sodium Borate ref. cryst. and powd. (Borax).....		.20	Sodium Hydrosulfite.....		....
Sodium Borate cryst. c.p....	.12	.50	Sodium Hydroxide 98% gran. ....		.15
Sodium Borate powd. c.p..	.15	.55	Sodium Hydroxide electrolyt. sticks .....	.15	.60
Sodium Borate anhydr. powd. c.p.....	.15	1.00	Sodium Hydroxide gran. pure free from NH ₃.....		.30
			Sodium Hydroxide by Baryta	.25	2.50

	Oz.	Lb.		Oz.	Lb.
Sodium Hydroxide by alc.			Sodium Pyroborate see Sod.		
c.p.	\$ 0.20	\$ 1.50	Borate, Borax.....		
Sodium Hydroxide from Na.	.40	3.50	Sodium Pyrophosphate cryst.		
Sodium Hydroxide with			c.p.	\$ 0.15	\$ 0.90
Lime			Sodium Pyrophosphate dry		
Sodium Hypochlorite solut..		.20	c.p. ....	.20	1.60
Sodium Hypophosphite.....	.25	1.80	Sodium Salicylate U.S.P.		
Sodium Hyposulfite see Sod.			powd. ....	.30	3.00
Thiosulfate			Sodium Salicylate c.p. cryst.	.35	3.50
Sodium Iodate c.p.....	1.20		Sodium Salicylate fr. nat. Oil		
Sodium Iodide c.p.....	.90		Wintergreen .....	.55	
Sodium Lactate syrupy.....	.50		Sodium Santoninate.....	4.50	
Sodium Lactophosphate.....	.40		Sodium Selenate.....		
Soda Lime see Sod. Calcium			Sodium Selenite.....	1.00	
Hydrate			Sodium Silicate techn. solut.		
Sodium Metaphosphate c.p..	.25	1.75	40-42° Be (Soda Water-		
Sodium Methylarsenate di-			glass) .....		.10
see Sod. Cacodylate.....			Sodium Silicate cryst. c.p....	.20	1.05
Sodium Molybdate c.p.....	.50	5.00	Sodium Silicate pure 40%		
Sodium Monosulfide see Sod.			solut. ....		.15
Sulfide cryst.....			Sodium Silicofluoride c.p....	.20	1.60
Sodium Nitrate cryst. techn.		.30	Sodium Stannate c.p.....	.20	1.60
Sodium Nitrate cryst. c.p....	.10	.40	Sodium Stearate c.p.....	.20	1.30
Sodium Nitrate powd c.p....	.15	.50	Sodium Succinate.....	.70	
Sodium Nitrite cryst. techn..	.15	.45	Sodium Sulfate techn. cryst..		.15
Sodium Nitrite cryst. c.p....	.15	.80	Sodium Sulfate purif. cryst..		.20
Sodium Nitrite sticks c.p....	.20	.95	Sodium Sulfate cryst. c.p....	.10	.30
Sodium Nitroprusside.....	1.50		Sodium Sulfate purif. dry		
Sodium Oleate.....	.15	.95	powd. ....		.20
Sodium Oxalate techn.....	.15	.90	Sodium Sulfate anhydr. c.p..	.15	.50
Sodium Oxalate c.p.....	.20	1.50	Sodium Sulfide cryst c.p....	.12	.45
Sodium Oxalate c.p. for			Sodium Sulfide fused.....	.15	.60
standardizing			Sodium Sulfite cryst. pure..		.30
Sodium Perborate c.p.....	.20	1.65	Sodium Sulfite cryst. c.p....	.10	.35
Sodium Permanganate.....			Sodium Sulfite dry: powd.		
Sodium Peroxide.....		4.25	pure .....	.10	.35
Sodium Peroxide special car-			Sodium Sulfite anhydr. c.p....	.15	.45
bonate free.....			Sodium Sulfocarbolate pure		
Sodium Peroxide fused.....	.45	5.50	U.S.P. ....	.20	1.45
Sodium Persulfate pure.....	.25	1.50	Sodium Sulfocyanate pure...	.25	
Sodium Phenolsulfonate			Sodium Tannate pure.....	.45	
Para- pure.....	.20	1.90	Sodium Tartrate c.p.....	.20	1.10
Sodium Phosphate secondary			Sodium Taurocholate.....	7.00	
cryst. ....		.30	Sodium Tellurate.....		
Sodium Phosphate secondary			Sodium Tellurite.....		
cryst. c.p.....	.10	.60	Sodium Tetraborate see Sod.		
Sodium Phosphate secondary			Borate (Borax).....		
anhydr. c.p.....	.15	.95	Sodium Tetroxalate c.p....	.30	2.75
Sodium Phosphate primary			Sodium Thiosulfate cryst.		
c.p. ....	.15	1.05	tchn. ....		.15
Sodium Phosphate tertiary			Sodium Thiosulfate dry pure		.20
c.p. ....	.20	1.20	Sodium Thiosulfate cryst.		
Sodium Phosphite c.p.....	.50		c.p. ....	.10	.25
Sodium Picrate.....	.30	2.50	Sodium Thiosulfate anhydr.		
Sodium Potass. Carbonate			c.p. ....	.12	.45
c.p. ....	.15	.90	Sodium Tungstate pure.....	.70	7.25
Sodium Potass. Nitrate c.p..	.18	1.00	Sodium Tungstate c.p. cryst.	.75	7.75
Sodium Potass. Phosphate			Sodium Valerianate.....	1.00	
c.p. ....	.20	1.30	Sodium Wolframate see Sod.		
Sodium Potass. Sulfate c.p..	.15	.85	Tungstate		
Sodium Potass. Tartrate			Solder .....	.15	.75
powd. c.p.....	.18	1.10	Solder Aluminum.....	.25	2.00
Sodium Potass. Tartrate					
cryst. c.p.....	.18	1.00			

	Oz.	Lb.		Oz.	Lb.
SOLUTIONS—			SOLUTIONS—		
Solution Acid Rosolic (indicator)		\$ 1.50	Solution Phenolphthalein T. S.		\$ 1.50
Solution Alkaline Pyrogallol, for gas analysis.....		2.50	Solution Platinic Chloride 5% .....		....
Solution Alumin Acetate 8% ....		.40	Solution Platinic Chloride 10% .....		....
Solution Ammon. Bisulfite c.p.		1.25	Solution Potassium Acetate		1.05
Solution Citrate, neutr.....		.55	Solution Potassium Hydrox- ide, for gas analysis.....		2.00
Solution Ammon. Molybdate acc. to Blair.....		1.10	Solution Sodium Bisulfite 30° Be. ....		.15
Solution Ammon. Nirite.....		1.00	Solution Sodium Cobaltic Nitrite T. S.		2.70
Solution Ammon. Sulphy- drate .....		.40	Solution Sodium Hydrate..		.85
Solution Barium Hydroxide T. S. ....		.80	Solution Sodium Silicate 40-42° Be com'l.....		.15
Solution Brazil Wood T. S.		1.50	Solution Sodium Silicate 10% pure.....		.80
Solution Bromine T. S.	\$ 0.40	....	Solution Tin (ous) Chloride T. S. ....		.50
Solution Calcium Bisulfite c.p. ....		.55	Solution Zinc Chloride c.p..		.50
Solution Calcium Chloride T. S. ....		.85	Solution Zinc Chloroiodide..\$ 0.80		....
Solution Calcium Hydrate T. S. ....		.85	Solution Zinc Iodide Starch		1.20
Solution Chlorine T. S. ....		.80	SOLUTIONS—SPECIAL TEST—		
Solution Chromium Ammon. Sulfate c.p.....		1.30	Benedict's, sugar.....		.90
Solution Chromium. Chloride 50% c.p.....		1.10	Dragendorff's, Alkaloids..		3.00
Solution Chromium. Nitrate 40% c.p.....		1.30	Esbach's, Albumen.....		.60
Solution Chromium. Sulfate 30% c.p.....		1.15	Fehling's Sugar.....		1.25
Solution Cobalt Nitrate T. S.		1.50	Gunzberg's, HCl in gastric juice	1.25	....
Solution Cochineal T. S.		1.50	Haine's, Glucose.....		....
Solution Copper (ous) Chloride acid.....		1.50	Hayem's, blood.....		.40
Solution Copper (ous) Chloride ammoniated.....		1.50	Mayer's, Alkaloids.....		1.50
Solution Diphenylamine T. S.		1.50	Millon's, Albumen.....		2.50
Solution Hydrogen Sulfide..		.80	Nessler's, Ammonia and Aldehyde		1.50
Solution Indigo T. S. ....		.95	Nylander's, Glucose.....		1.75
Solution Iodine T. S.		1.65	Schuchardt's, HCl in gas- tric juice.....		1.75
Solution Iron Acetate (ous) ....		.45	Schweizer's, Cellulose....		1.95
Solution Iron (ic) Chloride. ....		.55	Tanret's, Alkaloids.....		1.50
Solution Iron (ic) Sulfate normal .....		.35	Toepfer's, HCl in gastric juice .....	.50	....
Solution Lead Acetate basic T. S. ....		.85	Toison's, blood.....	.35	....
Solution Litmus T. S.		1.60	Valser's Alkaloids.....		1.50
Solution Magnesia Mixture T. S. ....		.85	Winkler's, Alkaloids.....		1.50
Solution Mercury (ic) Chloride alcoholic T. S....		1.50	SOLUTIONS — STANDARD VOLU- METRIC—		
Solution Mercury (ous) Nitrate T. S.		1.50	Acid Hydrochloric 1/10 N.		1.20
Solution Methyl Orange T. S.		1.50	Acid Nitric 1/10 N.....		1.20
			Acid Oxalic 1/10 N.....		1.20
			Acid Sulfuric 1/10 N.....		1.20
			Ammon. Hydrate 1/10 N..		1.20
			Ammon. Thiocyanate 1/10 N.		1.40
			Arsenous Trioxide 1/10 N.		1.40

	Oz.	Lb.		Oz.	Lb.
Iodine 1/10 N.....		\$ 1.50	Strychnine Acetate.....	2.40	....
Potass. Bichromate 1/10 N..		1.20	Strychnine Arsenate.....	2.40	....
Potass. Hydrate 1/10 N.....		1.20	Strychnine Arsenite.....	2.40	....
Potass. Permanganate 1/10			Strychnine Citrate.....	2.40	....
N.		1.50	Strychnine Glycerophosphate		....
Silver Nitrate 1/10 N.....		1.75	Strychnine Hydrochloride...	2.40	....
Sodium Carbonate 1/10 N...		1.50	Strychnine Hypophosphite..	2.75	....
Sodium Chloride 1/10 N....		1.50	Strychnine Nitrate.....	2.40	....
Sodium Hydrate 1/10 N.....		1.20	Strychnine Phosphate.....	2.40	....
Uranium Acetate		1.75	Strychnine Sulfate cryst....	1.80	....
Uranium Nitrate		1.75	Strychnine Sulfate powd....	1.80	....
Sorbit .....		....	Strychnine Valerianate....	3.50	....
Sozoiiodole, Mercury.....	\$ 1.95	....	Stypticin (Cotarnine Hydro-		....
Sozoiiodole, Potassium.....	1.65	....	chloride)	7.50	....
Sozoiiodole, Sodium.....	1.30	....	Styptol (Cotarnine Phtalate)	7.50	....
Sparteine Sulfate.....	4.50	....	Styracin cryst. pure.....	....	....
Stannic and Stannous Salts			Styracol (Guaiaicol Cinn-		....
see Tin.....		....	mate)	1.50	....
Starch, Arrow-Root.....		.40	Styrax Balsam.....		\$ 0.45
Starch, Corn.....		.25	Styrone Liquid.....	3.20	....
Starch, Potato.....		.50	Succrose see Saccharose....	....	....
Starch, Rice.....		.60	Sugar, Acorn see Quercit... ..	....	....
Starch, Wheat.....		.25	Sugar, Cane see Saccharose. ....	....	....
Starch Iodized.....	.60	....	Sugar, Grape see Dextrose. ....	....	....
Starch Soluble.....	.20	1.35	Sugar, Lead see Lead Ace-		....
Starch Sugar see Dextrose..	....	....	tate .....	....	....
Stearin .....		.35	Sugar, Manna see Mannit... ..	....	....
Strontium Metal.....	....	....	Sugar, Milk see Lactose....	....	....
Strontium Acetate c.p.....	.20	2.10	Sulfide Cubes (For H ₂ S)....	.15	.60
Strontium Bromide cryst... ..	.25	2.25	Sulfite Cubes (For SO ₂)....	.15	.75
Strontium Bromide anhydr..	.30	2.75	Sulfonal (Diethylsulfondime-		....
Strontium Carbonate pure... ..	.15	.80	thyl-methane) .....	....	....
Strontium Carbonate c.p....	.18	.95	Sulfur Roll (Brimstone)....	....	.15
Strontium Chlorate cryst.		....	Sulfur Sublimed (Sulfur		....
pure .....	....	....	Flowers) .....	....	.20
Strontium Chloride cryst.		....	Sulfur Sublimed washed....	....	.20
pure .....	.15	.60	Sulfur Precipit. pure.....	....	.60
Strontium Chloride cryst,		....	Sulfur cryst.....	.20	1.50
c.p. ....	.18	.95	Sulfur Chloride.....	.15	.75
Strontium Chromate c.p....	.25	2.55	Sulfur Dioxide, 6-lb. Cylinder	....	....
Strontium Fluoride c.p.....	.20	1.65	Sulfur Iodide.....	....	.65
Strontium Hydroxide c.p....	.20	1.75	Sulphonethylmethane U.S.P..	1.60	....
Strontium Iodide.....	.70	....	Sulphonmethane U.S.P.....	1.25	....
Strontium Lactate.....	.30	2.85			
Strontium Nitrate dry powd.		....	Talcum powd.....	....	.18
techn. ....	....	.70	Talcum powd. purif.....	....	.30
Strontium Nitrate dry powd.		....	Tannalbin (Tannin albumin-		....
c.p. ....	.15	.95	ate exsicc.).....	1.15	....
Strontium Oxalate.....	.20	2.00	Tannin see Acid Tannic....	....	....
Strontium Oxalate c.p.....	.25	2.50	Tannoform (Tanninformal-		....
Strontium Phosphate c.p....	.25	1.75	dehyde) .....	.75	....
Strontium Salicylate U.S.P..	.30	3.00	Tartar Emetic see Antimon..	....	....
Strontium Sulfate com'l....	....	.50	Pot. Tartrate.....	....	....
Strontium Sulfate c.p.....	.15	.90	Tartar Soluble see Potass. ....	....	....
Strontium Sulfide c.p.....	.25	2.00	Tellerium Metal.....	....	....
Strophanthin .....	....	....	Terbene Optically inactive..	.20	1.00
Strychnine Alkaloid cryst...	2.00	....	Terpin Hydrate.....	.15	.85
Strychnine Alkaloid powd..	\$ 1.75	....	Terpineol .....	.20	2.00

	Oz.	Lb.		Oz.	Lb.
Terpinol	\$ 0.30	\$ 2.50	Thymol Iodide U.S.P.....	\$ 1.10	....
Test Lead see Lead Metal..	....	....	Thymophtalein .....	....	....
Test Paper—			Thyroidin	1.55	....
Litmus red, blue and Tur-			Tin Metal pure sticks.....	.20	\$ 1.30
meric .....	....	....	Tin Metal pure gran.....	.20	1.30
100 strips .....	....	....	Tin Metal pure shot.....	.20	1.30
Litmus neutral, Brazil			Tin Metal pure fine powd...	.20	1.35
Wood, Congo Red,			(Tin) Foil, Com'l composi-		
Dimethylamid-			tion .....	.10	.35
oazobenzol, Lead Ace-			Tin Metal foil.....	.25	1.90
tate, Methyl-Orange,			Tin Bichloride see Tin (ic)		
Phenolphthalein, Potass.			Chloride .....	....	....
Iodide, Potass. Iodide,			Tin (ic) Chloride cryst. c.p.	.15	1.20
Potass. Iodide Starch			Tin (ic) Chloride fuming c.p.	.20	1.75
Saltpetre, Starch, Tro-			Tin (ous) Chloride cryst.		
paolin, etc.....	....	....	pure .....	.20	1.25
100 strips .....	....	....	Tin (ous) Chloride cryst. c.p.	.15	.95
Azolitmin, Lacmoid, Phlor-			Tin (ous) Oxalate c.p.....	.25	2.00
oglucine, Sod. Nitroprus-			Tin (ic) Oxide gray.....	.15	1.35
side, etc. 100 strips....	....	....	Tin (ic) Oxide white pure...	.15	1.25
Tetrachlorethene see Carbon			Tin (ic) Oxide white c.p....	.20	1.75
Dichloride .....	....	....	Tin (ous) Oxide black techn.	.20	1.75
Tetrachlorethylene see Car-			Tin (ous) Oxide black c.p..	.30	2.75
bon Dichloride .....	....	....	Tin (ous) Phosphate c.p....	.30	2.75
Tetrachloromethane see Car-			Tin (ous) Sulfate c.p.....	.20	1.75
bon Tetrachloride.....	....	....	Tin (ic) Sulfide (di) c.p....	.50	5.00
Tetrachloroquinone see Chlo-			Tin (ous) Sulfide (mono)...	.25	2.00
ranil .....	....	....	Titanium Carbide.....	....	....
Tetraiodopyrol see Iodol...			Titanium (ic) Oxide anhydr.		
Tetramethyldiaminobenzo-			c.p. ....	.75	7.00
phenone see Michler's Ke-			Titanium (ic) Oxide c.p....	1.50	....
tone .....	....	....	Titanium Potass. Fluoride		
Tetraoxyphtalophenonanhl-			c.p. ....	....	....
dride see Fluoresceine....	....	....	Titanium Potass. Oxalate...	.25	1.60
Thallium Metal.....	....	....	Titanium Sulfate pure.....	....	....
Thallium Chloride.....	....	....	Tolidin (Ortho).....	....	....
Thallium Iodide.....	....	....	Toluene (Toluol or		
Thallium Nitrate.....	....	....	Methylbenzene) .....	.15	1.50
Thallium Oxide.....	....	....	Toluene c.p.....	.25	2.25
Thallium Silver Nitrate....	....	....	Toluidine (Ortho).....	....	....
Thallium Sulfate.....	....	....	Toluidine (Para).....	....	....
Theine see Caffeine.....	....	....	Traumaticin (Gutta Percha		
Theobromine (Dimethylxan-			Chloroform sol. 5%.....	.50	....
thine from Cocoa.....	1.90	....	Tribromomethane see		
Theobromine Sodium Ace-			Bromoform .....	....	....
tate (Agurin).....	1.75	....	Tribromphenolbis-muth see		
Theobromine Sodium			Xeroform .....	....	....
Salicylate	1.60	....	Tributyrin .....	....	....
Theophylline (Dimethylxan-			Trichloracetamid .....	....	....
tine from Coffee and Tea)	....	....	Trichloromethane see		
Thermit .....	.15	.80	Chloroform .....	....	....
Thigenol .....	.40	3.75	Trichlorophenol .....	....	....
Thiocarbanil see Oil Phenyl-			Triferin (Iron Para-		
mustard .....	....	....	nucleinate)	1.25	....
Thiocol (Potass.			Triiodomethane see Iodo-		
Guaiacolsulfonate)	2.10	....	form .....	....	....
Thiol liquid (Mixt. Sulfur-			Trimethylamine 10% aq.		
ized Hydrocarbons).....	.40	3.75	solut. (Propylamine).....	1.10	....
Thiol powder.....	1.00	....	Trimethylamine 33% aq.		
Thiosinamine (Allyl Sulfo-			solut. ....	....	....
carbamide) .....	.90	....	Trimethylamine Hydro-		
Thorium Metal.....	....	....	chloride .....	....	....
Thorium Chloride c.p.....	2.00	....		
Thorium Nitrate c.p.....	1.00	....		
Thorium Oxide.....	....	....	
Thorium Sulfate.....	....	....	
Thymol cryst.....	1.00	....		

	Oz.	Lb.		Oz.	Lb.
Trimethylbenzene see			Water Distilled.....		
Cumene			Water Ammonia see		
Trimethylethylene see			Ammon. Hydrate.....		
Amylene			Water Bromine see Bromine		
Trimethylxanthine see			Water Chlorine see Chlorine		
Caffeine			Water Hydrogen Sulfide....		\$ 0.50
Trinitrophenol see Acid			Water Javelle.....		.12
Picric			Water Lime.....		.12
Trioxybenzene see			Wax White.....		.85
Phloroglucin			Wax Yellow, Bee's.....		.55
Trioxymethylene (Para-			Wax Carnauba.....	\$ 0.20	1.25
form)	\$ 0.20	\$ 1.20	Wax Japan.....		.45
Triphenin (Propionyl-			Wax Mineral see Ceresin....		
phenetidin) .....	.85		Wax Sealing.....		.35
Tropacocaine Hydrochloride.			Wax Sealing best sticks....		.75
Trypsin			White Arsenic see Acid		
Tungsten Metal.....			Arsenous		
Tungsten Oxide see Acid			White Lead see Lead Car-		
Tungstic			bonate		
Tumeric powd.....	.15	.60	White Praecipitate (Mercury		
Tumeric Yellow see			ammoniated) .....	.25	2.60
Curcumin			White Praecipitate Fusible		
Turpentine Spirits see Oil			(Mercury Ammon. Bi-		
Turpentine			chloride) .....	.30	2.85
Turpentine Venice.....		.60	White Vitriol see Zinc sul-		
Tyrosin			fate		
Uranium Metal fused.....			Wolfram see Tungsten....		
Uranium Acetate.....	.80		Wood Alcohol see Alcohol		
Uranium Acetate Na free... 1.05			Methylic		
Uranium Bromide pure.....			Wood Vinegar see Acid		
Uranium Chloride pure.... .95			Pyroligneous		
Uranium Nitrate cryst c.p.. .90			Wool Fat see Lanum.....		
Uranium Nitrate Na free... .80			Xeroform (Tribromphenol		
Uranium (ous) Oxide black			bismuth) .....	.60	
pure			Xylene (Dimethylbenzene)..	.15	.70
Uranium (ic) Oxide red pure 1.65			Xylene c.p.....	.20	1.20
Uranium Sulfate .....	.75		Xylidine 1:2:4.....		
Uranium Yellow (Sod.			Xylidine 1:3:4.....		
Uranate) .....	.80		Xylose		
Urea Pure (Carbamide).... .50		2.40	Yttrium Nitrate c.p.....		
Urea Nitrate c.p.....	.70		Zinc Metal coml. mossy, or		
Urea Sulfate c.p.....	1.00		gran. ....	.15	.70
Urethane (Ethyl Carbamate) .60			Zinc Metal coml. powd.		
Urethane Phenyl see			(Dust) .....	.18	1.10
Euphorin			Zinc Metal coml. sheet 4x½"	.15	1.50
Urotropin see Hexa-			Zinc Metal pure turnings for		
methylenamine			H ₂ O analysis.....	.18	1.50
Vanadium Metal.....			Zinc Metal c.p. sticks, shot,		
Vanadium Chloride.....	.5.00		mossy or gran.....	.15	.90
Vanillin	1.00		Zinc Metal c.p. gran. 30 mesh	.15	.90
Vaselin see Petrolatum....			Zinc Metal c.p. gran. 20 mesh	.20	1.05
Velatol	1.50		Zinc Metal c.p. gran. As free	.20	1.40
Veratrine pure.....	3.40		Zinc Metal Amalgamated... .20	1.50	
Veratrine Sulfate.....	3.50		Zinc Acetate c.p.....	.15	1.25
Verdigis see Copper Acetate			Zinc Arsenite c.p.....	.35	3.75
Veronal (Diethylbarbituric			Zinc Benzoate.....	.80	
acid)	3.00		Zinc Borate c.p.....	.30	3.25
Veronal Sodium.....	3.00		Zinc Bromide.....	.75	
Volumetric Solutions see			Zinc Carbonate ppt.....	.15	.80
Solutions					

	Oz.	Lb.		Oz.	Lb.
Zinc Carbonate c.p.....	\$ 0.20	\$ 1.50	Zinc Phosphate c.p.....	\$ 0.20	\$ 1.70
Zinc Chloride Tech.....	.10	.60	Zinc Phosphide.....	.60	....
Zinc Chloride gran. c.p.....	.15	.85	Zinc Phosphite pure.....	....	....
Zinc Chloride sticks c.p.....	.18	1.00	Zinc Potass. Cyanide.....	....	....
Zinc Chloride pure.....	.15	.65	Zinc Potass Sulfate c.p.....	....	....
Zinc Chloride fused.....	.20	1.30	Zinc Salicylate.....	.40	....
Zinc Chloriodide.....	....	....	Zinc Stearate.....	.15	.90
Zinc Chromate c.p.....	.25	2.15	Zinc Subgallate.....	.30	....
Zinc Cyanide pure.....	.35	....	Zinc Sulfate cryst. techn....	.10	.30
Zinc Ferrocyanide.....	.45	....	Zinc Sulfate cryst. pure....	.15	.65
Zinc Gallate see Zinc subgallate.....	....	....	Zinc Sulfate dry c.p.....	.20	1.20
Zinc Hypophosphite.....	.45	....	Zinc Sulfate cryst. c.p.....	.15	.70
Zinc Iodide.....	.80	....	Zinc Sulfide techn.....	.20	1.50
Zinc Lactate.....	.40	....	Zinc Sulfide c.p.....	.30	2.75
Zinc Nitrate cryst. pure....	.15	1.00	Zinc Sulfide Phosphorescent strong for demonstration purpose.....	....	....
Zinc Nitrate sticks c.p.....	.20	1.50	Zinc Sulfide phosphorescent extra strong, containing Radium.....	....	....
Zinc Oxalate c.p.....	.25	2.00	Zinc Sulfocarbolate pure....	.25	2.25
Zinc Oxide Tech.....	.10	.45	Zinc Tannate pure.....	.40	....
Zinc Oxide dry process c.p. Mn. free.....	.15	.75	Zinc Valerianate powd.....	1.30	....
Zinc Oxide wet process c.p..	.20	1.40	Zirconium Hydroxide.....	....	....
Zinc Perborate.....	.50	....	Zirconium Nitrate.....	....	....
Zinc Perhydrol 50%.....	.60	Zirconium Oxide anhydr....
Zinc Permanganate.....	.75			
Zinc Peroxide see Zinc perhydrol.....			

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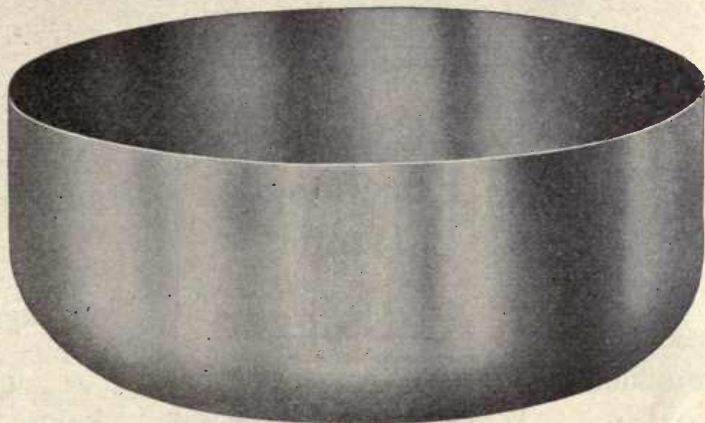
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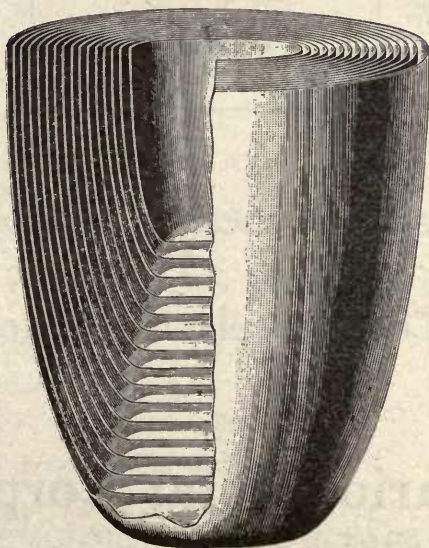
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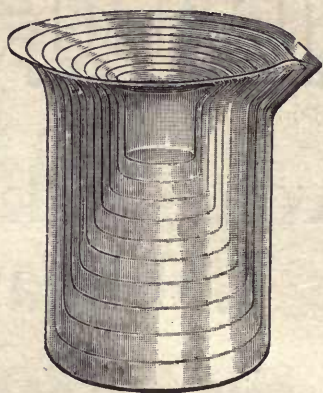
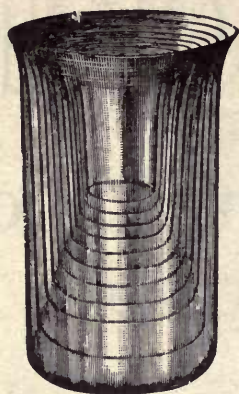
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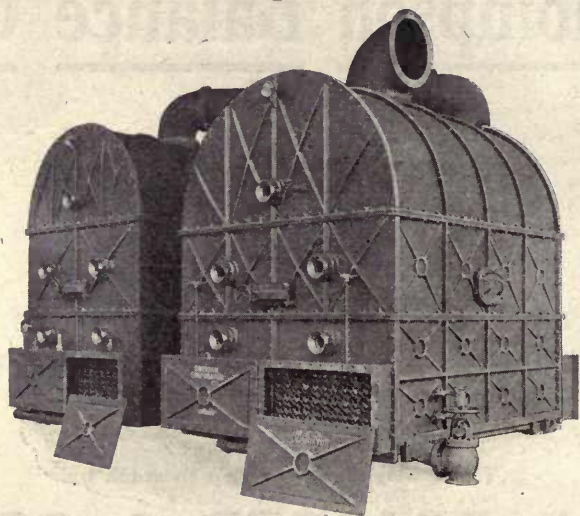
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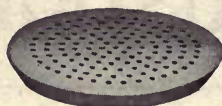
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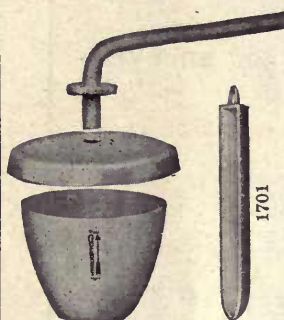
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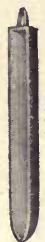
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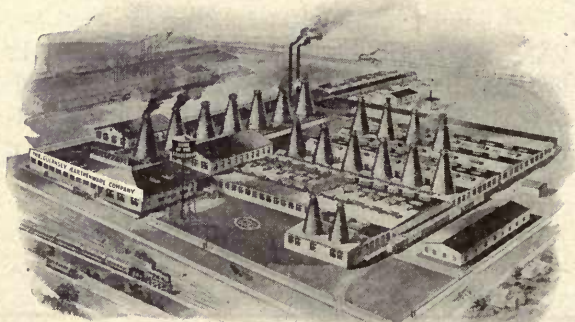
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